PUBLIC HEALTH REPORTS

VOL. 53 NOVEMBER 25, 1938 NO. 47

PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES

October 9–November 5, 1938

The accompanying table summarizes the prevalence of eight important communicable diseases, based on weekly telegraphic reports from State health departments. The reports from each State are published in the Public Health Reports under the section "Prevalence of disease." The table gives the number of cases of these diseases for the 4-week period ending November 5, the number reported for the corresponding period in 1937, and the median number for the years 1933–37.

DISEASES ABOVE MEDIAN PREVALENCE

Influenza.—During the current 4-week period the incidence of influenza increased about 45 percent over the preceding four weeks, but such an increase is normally expected at this season of the year. The number of cases (3,836) was about 35 percent above the number reported for the corresponding period in 1937, and almost 50 percent above the average incidence for this period in the years 1933–37. The disease was most prevalent in the South Atlantic, South Central, and Mountain regions; in the South Atlantic and Mountain regions the incidence was the highest recorded for this period in recent years. In the North Atlantic regions the incidence was about normal, while other regions reported fewer cases than might normally be expected. While the number of cases for the country as a whole has not been large, the incidence has maintained a relatively high level since the latter part of the summer.

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Measles.—For the current 4-week period 5,410 cases of measles were reported, as compared with 7,216, 2,022, and 4,510 for the corresponding period in 1937, 1936, and 1935, respectively. In the Middle Atlantic and East South Central regions the number of cases was relatively low, in the South Atlantic region the incidence was approximately the same as the 1933–37 median, and all other regions reported increases over the average seasonal incidence.

Number of reported cases of 8 communicable diseases in the United States during the 4-week period Oct. 9–Nov. 5, the number for the corresponding period in 1937, and the median number of cases reported for the corresponding period 1933–37 [1]

Division	Diphtheria			Influenza [2]			Measles [3]			Meningococcus meningitis		
	Current period	1937	5-year median	Current period	1937	5-year median	Current period	1937	5-year median	Current period	1937	5-year median
United States [1]	4,262	3,943	5,410	3,836	2,832	2,659	5,410	7,216	4,513	168	246	243
New England	40	48	71	22	13	13	456	396	397	6	10	10
Middle Atlantic	241	262	386	88	80	73	740	2,529	1,076	30	46	43
East North Central	592	620	1,103	234	309	309	612	1,740	570	35	44	44
West North Central	302	349	518	117	157	164	994	694	224	7	16	16
South Atlantic	1,576	1,305	1,391	1,729	750	750	580	766	587	36	57	52
East South Central	674	507	793	358	333	268	66	311	311	32	40	15
West South Central	583	509	509	830	871	629	232	90	90	13	13	14
Mountain	118	191	95	359	161	130	652	476	279	3	14	11
Pacific	136	152	174	99	158	164	1,078	214	798	6	9	13

Division	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Current period	1937	5-year median	Current period	1937	5-year median	Current period	1937	5-year median	Current period	1937	5-year median
United States [1]	136	879	879	11,116	12,506	15,050	225	487	244	1,320	1,388	1,768
New England	6	53	53	456	672	737	0	0	0	24	41	41
Middle Atlantic	37	122	122	1,635	1,901	2,442	0	0	0	220	176	215
East North Central	20	190	190	3,915	4,114	4,517	61	53	52	124	190	256
West North Central	10	191	78	1,430	2,058	1,664	46	181	91	81	107	117
South Atlantic	27	38	38	1,216	1,301	1,705	0	2	3	286	221	351
East South Central	15	56	46	725	581	919	8	67	9	136	157	222
West South Central	8	89	40	540	619	423	23	9	12	272	334	306
Mountain	11	40	18	396	523	614	52	88	31	108	115	149
Pacific	12	100	95	803	737	944	35	87	58	69	47	79

[1] 48 States. Nevada is excluded and the District of Columbia is counted as a State in these reports.
[2] 44 States and New York City.
[3] 46 States. Mississippi and Georgia are excluded.

DISEASES BELOW MEDIAN PREVALENCE

Poliomyelitis.—For the four weeks ending November 5 there were 136 cases of poliomyelitis reported, the lowest number on record for this period in the 10 years for which these data are available. The nearest approach to this figure is 447 cases reported for the corresponding period in 1932, the only year since 1929 that this disease has not appeared in epidemic-like form in some part of the country. In 1929 there were 459 cases reported for this period. For the country as a whole the current incidence represents a decrease from the preceding four weeks of almost 50 percent; and as the peak of this disease is

usually passed during the first part of October, a still further decline may be expected. With approximately 1,500 cases reported since the beginning of the year, it is apparent that the number of cases of poliomyelitis during the current year will be the lowest on record.

Smallpox.—After a period of comparatively high incidence, the number of cases of smallpox has dropped to a more normal level. The number of reported cases (225) for the current period was less than 50 percent of the number reported for the corresponding period in 1937, and about 10 percent below the 1933–37 average figure for this period. The East North Central, West South Central, and Mountain regions reported more cases than might normally be expected, the West North Central and Pacific regions reported decreases from the seasonal average, and the Atlantic Coast regions apparently remained free from the disease.

Typhoid fever.—The incidence of typhoid fever remained at a very satisfactory level. The number of cases (1,320) occurring during the four weeks under report was the lowest recorded for this period in the 10 years for which similar data are available. The Middle Atlantic, South Atlantic, and Mountain regions reported more cases than occurred during the corresponding period in 1937, but only one region, the Middle Atlantic, reported an excess over the 1933–37 median.

Diphtheria.—The number of cases (4,262) of diphtheria was higher than the number reported for the corresponding period in each of the 2 preceding years, but it was less than 80 percent of the 1933–37 average incidence. The disease was most prevalent in the South Atlantic region, with slight increases over the 1933–37 average incidence in the West South Central and Mountain regions; other regions reported very definite decreases from the normal seasonal expectancy.

Meningococcus meningitis.—For this disease the situation continued very favorable during the current period, with a total number of 168 cases reported, as compared with 246, 243, and 273 for the corresponding period in 1937, 1936, and 1935, respectively. The South Atlantic region reported more than twice the average number of cases occurring during this period, and the incidence in the East South Central region stood approximately at the 1933–37 average level; in all other regions the incidence was relatively low. For this period in 1932, 1933, and 1934, the three years of lowest incidence in the 10 years for which these data are available, the average number of cases reported was 135.

Scarlet fever.—The incidence of scarlet fever (11,116 cases) remained relatively low—about 10 percent below the incidence for the corresponding period in 1937 and more than 25 percent below the 1933–37 average incidence. The West South Central region reported a few more cases than might normally be expected, but in all other regions the incidence was comparatively low.

MORTALITY, ALL CAUSES

The average mortality rate from all causes in large cities for the four weeks ending November 5, based on data received from the Bureau of the Census, was 10.8 per 1,000 inhabitants (annual basis). The current rate may be considered normal for this season of the year, the average rate for this period during the five preceding years being also 10.8.

SUSCEPTIBILITY OF ANIMALS TO ENDEMIC TYPHUS VIRUS[1]

(Second report)

By GEORGE D. BRIGHAM, *Assistant Bacteriologist, United States Public Health Service*

The following species of animals native to the United States have been previously reported by this laboratory as susceptible to endemic typhus fever: Woodchuck, meadow mouse, whitefooted mouse, opossum, oldfield mouse, cotton mouse, golden mouse, wood rat, cotton rat, rice rat, and flying squirrels. Raccoons were found insusceptible (*1*, *2*, *3*). Further studies now add to this list two species of squirrels, two species of wild rabbits, a species of chipmunk, and skunk. Two gray foxes were not susceptible. The animals used in these experiments were all trapped in southern Alabama.

The susceptibility of these animals was determined by the same general procedure. Each animal was inoculated intraperitoneally with the testicular washings from a guinea pig at a routine transfer of the stock Wilmington strain of endemic typhus. After a lapse of time the animal was killed, and the brain was removed and inoculated into guinea pigs. The recovered strain was studied in a series of guinea pigs to identify it by its clinical reaction, brain lesions,[2] cross immunity with a known typhus strain, and for the presence of rickettsia. Rabbits were inoculated for the production of agglutinins for *Proteus* OX19.

No strains of typhus recovered from these animals exhibited any differences, when compared in guinea pigs, from the original Wilmington strain.

SQUIRREL

A gray squirrel (*Sciurus carolinensis carolinensis*) and a fox squirrel (*Sciurus niger niger*) were inoculated with the endemic typhus virus. No gross signs of infection were noted in either animal. The gray

[1] Contribution from Typhus Research Laboratory, Mobile, Ala. Division of Infectious Diseases, National Institute of Health, Washington, D. C.

[2] All histologic examinations of brain sections were made by Dr. R. D. Lillie, National Institute of Health, Washington, D. C.

squirrel was killed 14 days and the fox squirrel 16 days after inoculation. The virus was recovered from both animals.

WILD RABBIT

One cottontail rabbit (*Sylvilagus floridanus mallurus*) and four swamp rabbits (*Sylvilagus aquaticus aquaticus*) were inoculated with typhus. Although the cottontail rabbit appeared to be in good health, it was found dead on the fifth day after inoculation. However, aborted fetuses were found in the cage and it is possible that the abortion contributed to the animal's death. The virus was recovered from this rabbit.

The swamp rabbits were killed 10, 14, 14, and 24 days after inoculation of the virus. All of the animals were in good health throughout the experiment. The virus was recovered from one of the rabbits killed on the fourteenth day.

CHIPMUNK

A chipmunk (*Tamias striatus striatus*) was injected with the virus. In this animal no sign of illness was observed. The virus was recovered 14 days after the inoculation.

SKUNK

A skunk (*Mephitis elongata*) was inoculated with typhus. There were no signs of illness observed in this animal. The virus was recovered from the skunk killed 16 days after the inoculation.

FOX

Two gray foxes (*Urocyon cinereoargenteus cinereoargenteus*) were inoculated with the typhus virus (10 cc and 12 cc T.W.). Both animals appeared to be active at all times. No strain was recovered from either animal when they were killed 14 days after the inoculation.

SUMMARY

The following animals were found to be susceptible to the virus of endemic typhus fever: Gray squirrel, fox squirrel, cottontail rabbit, swamp rabbit, chipmunk, and skunk. The gray fox was not susceptible.

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THE MANIPULATION AND COUNTING OF RIVER PLANKTON AND CHANGES IN SOME ORGANISMS DUE TO FORMALIN PRESERVATION

By JAMES B. LACKEY, *Cytologist, United States Public Health Service, Stream Pollution Investigations, Cincinnati, Ohio*

The estimation of plankton populations in water samples has always offered serious difficulties. It is seldom that such samples can be examined untreated and within a short time after having been secured, so a frequent practice is to preserve them by adding formalin as soon as possible after the sample is taken. A 5 percent solution is usually an adequate preservative but lesser strengths are frequently used.

Identification of living algae and protozoa is often difficult, particularly of those forms which move about rapidly, those which show only slight species differences and those which are very small. A killing agent which stops movement often destroys identifying characteristics, and leaves the observer in difficulty. The easiest solution of these difficulties is to examine a fresh sample, then use a suitable killing fluid and re-examine the contents of the sample. This, of course, is a time-consuming process, but has the advantage of giving a good picture to the investigator; and if the same forms are thereafter encountered, fewer difficulties are presented. Repeated examinations of the same small body of water, or of a particular location in a large body of water, generally show substantially the same list of plankton species time after time. This list is, of course, subject to seasonal modification, and any other decided environmental change will likewise be reflected in the plankton content.

In 1937 a weekly examination and enumeration of the plankton content of the Scioto River of Ohio was inaugurated by the United States Public Health Service. Twelve sampling points were set up, beginning just below the low head dam at Columbus, where the water was presumably unpolluted. The next one was below the outfall of the Columbus sewage disposal plant at the point of maximum pollution. Other stations were located in this polluted zone, in a recovery zone, and finally in the lower reaches of the stream where no pollution was indicated by chemical and bacteriological studies. A number of tributary streams were also sampled from time to time, and a somewhat flexible schedule was arranged. It was arranged that biweekly samples could be examined within a few hours after being taken, and with no killing agent added and, furthermore, that these samples would be iced in warm weather so that no extensive changes could occur before examination. On alternate weeks the samples were immediately preserved by the addition of sufficient formalin to give a 4 to 5 percent strength.

A 4 or 5 percent solution of formalin is recommended, because lower concentrations kill more slowly and allow time for distortion or rupture, while higher concentrations cause some forms to swell and others to shrink. Four or 5 percent solutions seem nearest a happy medium.

Samples were taken in the current of the stream with a sampling bottle designed by the United States Public Health Service. A plankton net could hardly be used at some of the stations; and while it is believed that the sampler missed certain forms, as plankton Crustacea, a plankton net would have allowed the escape of many of the smaller protozoa and algae. On arrival at the laboratory, the 250-ml sample was shaken thoroughly and a portion centrifuged. Often a 30-ml portion gave a true sample; but if organisms were scarce, as much as 200 ml was centrifuged at a speed of about 2,500 revolutions per minute for 5 minutes longer. Then all but the catch and a little supernatant was decanted. Repeated examinations of this decanted portion showed that almost all organisms were retained in the catch. A few minute green algae, such as *Ankistrodesmus* or *Chorella*, were not completely thrown down, probably because of their small size and low specific gravity. A small flagellate, *Chrysococcus rufescens*, behaved likewise, sometimes as many as 20 percent of them remaining in the decanted portion. But such exceptions were rare.

COUNTING METHODS

The catch was first measured. After thorough agitation by alternately sucking it in and spurting it out of the pipette, the exact number of drops was counted and a sufficient number of drops of the decanted portion was added, so that 1 drop of catch bore a definite relationship to the amount centrifuged. For example, if a 100-ml sample was centrifuged and then decanted, and the remainder, or catch, found to consist of 76 drops, 24 drops of the decanted portion were added. This made 1 drop of catch equal 1 ml of the original sample. This method is quick and thorough, and is independent of breakage of pipettes or exact measurements into graduates. Furthermore, if the catch is small, 1 drop may be made the equivalent of 5 ml of the original sample, or if large, 2 ml. Investigations were made to learn whether the centrifuging or spurting was harmful to the organisms, and the only ones found to be harmed were *Uroglena americana* and, to a limited extent, colonies of *Oicomonas socialis*. Except for these two, samples containing the largest and most delicate protozoa and rotifera may be handled in this way, but small Crustacea would probably not be amenable to such treatment. If large samples are used, if the catch should be unusually great or if large forms are present such a procedure might not suffice.

In counting, 1 drop of the catch was put on the center of a slide. Pipettes delivering 20 to 24 drops per ml were customarily used, because a drop of such size spreads uniformly beneath a 25-mm cover glass and does not spread much beyond its edge. Cover glasses of No. 1 thickness were used because of their lightness. Then two paths entirely across the spread-out drop were examined with the 10× objective, each across the center and at right angles to each other. All organisms in these two paths were counted. This was repeated for 10 drops, because with the particular microscope employed (a Bausch and Lomb model HSET binocular with 12.5 oculars and 10× and 43× apochromatic objectives) the diameter of the low-power field was 1.2 mm, hence the 20 paths counted represented an entire drop. With the 43× objective, one path represented one-eightieth of a drop; and in counting the 10 drops, one-fourth of an entire drop was thus examined with the high power. If 1 drop is equivalent to 1 ml of raw water, the total count for 20 fields thus represents the numbers per ml, or one-fourth the number per ml.

This method has some disadvantages, of course. One is that the cover glass has a slight tendency to squeeze out liquid and organisms. Use of a small drop minimizes this. If larger organisms are present, and squeezed out, they may be counted in the entire drop, including the squeezed-out margins in about a minute's time by using a still lower magnification. This proved to be rarely necessary. Other disadvantages are the changes due to evaporation, or migration of photosynthetic forms. These are obviated, however, by counting *only* two paths, and doing so quickly. If the sample contains such a great number of organisms that quick counting is impossible, not all forms need be counted in each path. Ciliata or Euglenida, for example, can be counted separately. If the sample is well mixed, each drop should be representative. A third small disadvantage is that the ratios one-twentieth and one-eightieth of a drop are not quite so exact, and are affected slightly by the "squeezed out" margin and by cover-glass variation. These errors are slight, however.

The obvious advantages of the method are as follows: First, inclusion of all organisms in the catch; second, simplicity and ease of manipulation; third, instant use of the high power where identification is questionable with the low power; and, fourth, the ability to count organisms measuring 10 microns or less with the high power. This is hardly possible with many counting chambers, and, furthermore, counting chambers may have wider dark margins than the squeezed-out margin around a cover glass.

It was early found that organisms whose greatest length was about 10 microns or less were frequently difficult to count at 125 diameters. *Cyclotella meneghiniana*, for example, might easily be overlooked. Also some of the organisms near this size, as *Cryptomonas erosa* or

Strobilidium humile, would frequently adhere to, or be included in, a mass of silt or debris in preserved samples. Comparative counts of 20 fields with low and high magnifications were made at times to determine which would give the most accurate estimate of the numbers present. An example of such a check is given in table 1.

TABLE 1.—*Sample of check counts at different magnifications*

(Sample: Columbus. Date: Dec. 9, 1937. Temperature 0.0. pH 7.9. D. O. 12:30 p. p. m. 1 drop (20 fields at 125X, 80 at 537.5X) =2 ml raw river water.)

Organism	Total 20 fields at 125X	Per ml	Total 20 fields at 537.5X	Per ml
Cyclotella meneghiniana (5–8 μ)	84	42.0	58	116
Cyclotella meneghiniana (9–12 μ)	55	27.5	49	98
Melosira granulata	5	2.5	0	0
Naviculoid diatoms	34	17.0	8	16
Nitzschia acicularis	7	3.5	2	4
Synedra spp	2	1.0	0	0
Tabellaria fenestrata	1	.5	0	0
Ankistrodesmus falcatus	5	2.5	6	12
spiralis	3	1.5	0	0
Golenkinia paucispina	3	1.5	0	0
Micractinum pusillum	1	.5	0	0
Oocystis crassa	3	1.5	0	0
Scenedesmus sp	0	0	1	2
Minute green cells			129	258
Microcystis aeruginosa	1	.5	0	0
Carteria cordiformis	1	.5	0	0
Chlamydomonas (5–8 μ)			8	16
(9–15 μ)	8	4.0	5	10
Polytoma granulifera	40	20.0	35	70
Thoracomonas phacotoides	1	.5	0	0
Euglena sp	2	1.0	0	0
Phacus pleuronectes	3	1.5	0	0
Trachelomonas crebea	8	4.0	2	4
Cryptomonas erosa	39	19.5	42	84
Rhodomonas lacustris			19	38
Chrysococcus rufescens			216	432
aspera			5	10
spiralis			9	18
Codomonas annulata	2	1.0	3	6
Codonosiga botrytis	2	1.0	0	0
Monosiga ovata			2	4
Colorless flagellates			102	204
Cyclidium sp	5	2.5	0	0
Strobilidium humile	2	1.0	0	0
Urotricha farcta	1	.5	0	0
Vorticella sp	0	0	2	4
Raphidiophrys pallida	1	.5	1	2

From table 1 it is quite evident that the larger forms may generally be counted at the lower magnification, but that some very definite exceptions occur. In the case of the larger specimens of *Cyclotella*, for example, the number found at the high magnification should have been nearer 14 than 49 *if the low power count was accurate.* Manifestly it was not, as specimens of this diatom are frequently hard to distinguish in debris. Naviculoid diatoms, on the other hand, are sharply differentiated and the numbers found agree at both magnifications. Minute green cells cannot be identified at the low power because their color and shape are not differentiated, and in formalin-preserved samples their color is frequently hard to determine at the high magnification unless the sample is but a few hours old. The organism called *Polytoma granulifera* is covered with sand grains and

is very difficult to distinguish from debris with the low magnification. The high magnification revealed about 3.5 times as many as would be normally expected if the low-power count were correct, but the low power count is probably far too low.

Precisely the same error holds for *Cryptomonas erosa*, largely due in this case to change in color and frequent distortion of the cell to a shapeless mass.

On the other hand, a chance organism may be found at the high magnification which is not present in the low-power counts, such as *Vorticella* sp., in the above table. Such organisms must be taken into account, but if accurate knowledge of their number is desired, it must be arrived at either by examination of much larger fields at lower magnifications (where the organisms are as large as *Vorticella*) or by examining a much greater number of fields. In some cases it may be safe to aggregate all of the larger organisms in the counts and use an average derived from this aggregate count for individual species.

The method of examination just described has been used for the plankton of one particular stream, where large ciliates or rotifers are relatively scarce, and Crustacea almost lacking. There may be objection to this method for general use on the ground that large organisms would not be found in examining one to several drops of the catch, whereas a counting chamber containing more, or even all, of the catch and examined with a still lower magnification would reveal these larger forms whose scarcity is compensated for by their size. As a test of this, counts of *Aeolosoma hemprichi*, a red oligochoete worm easily visible to the naked eye, were made. The worms were present in large numbers in an activated sludge plant. These were picked up in a well-mixed sludge sample and transferred onto the slide with a pipette delivering 24 drops per ml. Following are the counts for 24 drops using 5× oculars and a 10× objective: 18–16–19–18–18–16–22–19–17–20–18–19–18–19–20–22–17–19–16–19–26–18–19–19. The average is thus 18.83 per drop, and the standard deviation 2.1. Each drop, therefore, constitutes a fair sample. A count was also made of the numbers of *Opercularia* and *Aspidisca*, two ciliate protozoa, in 10 of these drops, using the 10× oculars. This was done only to determine whether it was feasible to change oculars and reexamine the drops with little difficulty. The changes were easily and quickly made, and the additional time necessary to change oculars and count the *Aeolosoma* in an entire drop was only about 70 seconds per drop.

Finally the numbers of rotifers in 40 fields and in 20 drops were counted. In 40 fields 14 were found; then, shifting to the 5× oculars, 136 were found in 20 drops. These represent 168 and 163.2 per ml, respectively, a difference too small to be significant. Obviously, the two methods are comparable and the essential difference is that the

species could be named with the 10× oculars, but not in all cases with the 5×.

This consideration shows that the method for reaching a number present in a given sample must be determined separately for each species. Some species offer little or no difficulty; others offer such difficulties that a study of them is essential for plankton enumeration.

CHANGES IN SCIOTO PLANKTON DUE TO FORMALIN PRESERVATION

Since many plankton samples are preserved with formalin, differences from the living condition may be helpful in counting such catches, and give knowledge of some of the difficulties spoken of previously. Of the 266 Scioto River samples, about 100 were examined fresh, the remainder as formalin-preserved samples. While the number of protistan species found was large (400), the tendency to recur was strong; many of the organisms were present for months at a time. Hence enough familiarity was obtained with many species to enable a ready recognition of them alive or preserved. Table 2 gives as complete a list of changes in the preserved organism from its living condition as it has been possible to tabulate. The table is not complete, for the study of the diatoms has been largely neglected, and some genera as *Scenedesmus* or *Chlamydomonas* have not been identified as to species.

Table 2 cannot be used as an absolute guide for the study of the organisms listed, for many exceptions have been noted; but it does indicate the general behaviour of most of those studied. Many of the facts it presents are obvious to the experienced observer, but others may be new, and to the beginning worker with plankton protozoa it may explain some otherwise puzzling observations. It tends to show that familiarity with living organisms may make it possible to identify those organisms even if they are completely changed as to shape, color, and cell organelles.

For example, *Hymenomonas roseola* has a characteristic shape (figure 4) when alive, and is golden brown; but after formalin preservation the color is largely lost or changes to green, the flagella disappear, and the animal tends to assume a rounded shape (figure 5). However, the surface pits retain their characteristic appearance (figure 6) and become an identifying mark.

It is difficult to assign separate values to columns 2 and 3. But some organisms will undergo decided changes of form with no appreciable change in size, as *Paramecium caudatum*, while others will swell as *Synura uvella*. Most of the chlorophyll-bearers undergo a gradual bleaching, but *Endorina elegans* bleaches very quickly. For this reason formalin-preserved samples are best kept in the dark. The olive green of *Cryptomonas*, the pale brown of *Rhodomonas*, and the bright golden brown of *Hymenomonas* are quickly replaced by a pale

bleached-out green, and no single case of the preservation of a stigma has been found; it seems universally to disappear. The blue of *Stentor coereuleus*, the pink of *Blepharisma undulans*, and the brown of *Frontonia leucas* also quickly disappear.

TABLE 2.—*Changes in the preserved organism from its living condition*

Organism	Number of samples in which found	Form distorted	Size changed	Color changed	Pellicle or shell hurt	Collar destroyed	Flagella or cilia lost	Cirri or pseudopodia damaged	Nucleus made visible	Chloroplasts or chromatophores distorted	Inclusions rendered invisible	Diagnostic feature in formalin specimen
Mastigophora:												
Chrysomonadida:												
Chromulina globosa	27	x							x			Shape, Chrom.
ovalis	18	x	x				x			x		None.
Chrysamoeba radians	7	x	x					x				Do.
Chrysococcus punctiformis	12											Unchanged.
rufescens typica	165											Do.
amphora	12											Do.
cylindrica	10											Do.
ovalis	115											Do.
major	15											Do.
rugosa	40											Shell.
spiralis	12											Do.
Chrysopyxis bipes	5						x					Shape, color.
Dinobryon spp	54	x	x	x			x			x		Lorica.
Hymenomonas roseola	24	x	x	x			x			x	x	Pitted shell.
Lagynion scherffelii	6			x			x					Shape.
Mallomonas akrokomos	6	x	x	x	x		x			x		None.
caudata	24	x	x	x	x		x			x		Spines size.[1]
sp	96	x	x	x	x		x			x		Spines, plates.[1]
Ochromonas ludibunda	10	x	x	x	x		x			x		None.
Synura uvella	9		x				[2]x					Shape.
Cryptomonadida:												
Chilomonas paramecium	1	x					x					Doubtful.
Chroomonas pulex	73	x	x	x			x			x		None.
nordstetii	73	x	x	x			x			x		Do.
setoniensis	73	x	x	x			x			x		Do.
Cryptomonas erosa	168	x	x	[3]x	x		x			x		General shape.[4]
maxima	32	x	x	[3]x	x		x			x		General size.
Cyathomonas truncata	4	x	x				x		x			Doubtful.
Nephroselmis olivacea	4											
Protochrysis viridis	14	x										
Rhodomonas lacustris	52			x								Structure, shape.
Phytomonadida:												
Carteria cordiformis	35											Unchanged.
Chlamydobotrys stellata	26											Do.
Chlamydomonas globosa		[5]x										Little change.
rheinhardii		[5]x										Do.
pertyii		[6]x										Do.
braunii		[5]x										Do.
caudata	2	[5]x										Do.
spp		[5]x										Do.
Chlorogonium elongatum	14						x					
Coccomonas orbicularis	1						x					
Collodictyon triciliatum	32	x	x				x					Unrecognizable.
Endorina elegans	54			[6]x								Little change.
Gonium pectorale	30	[7]x					x					Do.
sociale	13	[7]x					x					Do.
Heteromastix angulata	12				x							Do.
Pandorina morum	25											Do.
Pedinomonas rotunda	1											
Phacotus glaber	2						x					Unchanged.
lenticularis	50						x					Do.
Polyblepharides singularis	1											Do.
Polytoma granulifera	35						x					General shape.
uvella	6	x					x					Questionable.
Pteromonas aculeata	1						x					General shape.
Spermatozopsis exultans	19											Unchanged.
Spondylomorum quaternarium	26											Do.

See footnotes at end of table.

TABLE 2.—*Changes in the preserved organism from its living condition*—Continued

Organism	Number of samples in which found	Form distorted	Size changed	Color changed	Pellicle or shell hurt	Collar destroyed	Flagella or cilia lost	Cirri or pseudopodia damaged	Nucleus made visible	Chloroplasts or chromatophores distorted	Inclusions rendered invisible	Diagnostic feature in formalin specimen
Mastigophora—Continued.												
Phytomonadida—Continued.												
Thoracomonas irregularis	36											Unchanged.
phacotoides	36											Do.
ampla	7											Do.
Wislouchiella planctonica	11											Do.
Euglenida (Colorless forms):												
Anisonema emarginatum	1	x					x					Questionable.
ovale	3	x					x					Do.
Astasia dangeardi	3											Masses paramylum in ant. end.
Dinema grisoleum	4											
Distigma proteus	4	x										Questionable.
Entosiphon sulcatus	1	x										Siphon sulci.
Heteronema acus	1											Shape, flagella.
Menoidium incurvuum	8						x					
Metanema variable	1	x			x		x					Unrecognizable.
Notosolenus apocamptus	1	x					x					Do.
orbicularis	3	x					x					Do.
Peranema granulifera	1						x					Questionable.
ovalis	3	x										Unrecognizable.
trichophorum	16	x										Questionable.
Petalomonas carinata	2						[3]x		x			Shape.
mediocanellata	5						[3]x		x			Do.
Sphenomonas quadrangularis							x		x			Do.
Urceolus sabulosus							x					Questionable.
Euglenida (Green):												
Cryptoglena pigra	1	x	x		x		x					Doubtful.
Euglena acus	28											Unchanged.
acutissimus	1											Do.
deses	26	x										Length, paramylum, chloroplasts.
ehrenbergii	4											Size, shape.
fusca	14	x			[3]x							Doubtful.
mutabilis		x										Length, chloroplasts.
oxyuris	18											Unchanged.
pisciformis	53	x										Chloroplasts, size.
polymorpha	39	x										Doubtful.
quartana												
sciotensis	12											Shape, paramylum, chloroplasts.
sociabilis	7	x										Doubtful.
spirogyra	2											Unchanged.
spiroides												Do.
torta	1											Do.
tripteris	20											Do.
viridis	82	x										Sometimes shape, chloroplasts.
Lepocinclis ovum	21		[4]x									Shape, pellicle.
texta	17		[4]x									Do.
Phacus acuminata	8						x					Unchanged.
anacoleus	2						x					Do.
brevicauda	9											Do.
longicauda	25											Do.
orbicularis	1											Do.
pleuronectes	36											Do.
pyrum	47	x	[4]x	[3]x								Pellicle, shape.
stokesii	8		[4]x									Shape.
striata	9		[4]x									Do.
triqueter	36											Unchanged.
Trachelomonas crebea	130											Do.
cylindrica	1											Do.
var. punctata	3											Do.
gibberosa	1											Do.
hispida	12											Do.
rugosa	2											Do.
scabra	20											Do.
schauinslandii	2											Do.
urceolata	92											Do.
volvocina	67											Do.
westii	1											Do.
euchlora	20											Do.

See footnotes at end of table.

TABLE 2.—*Changes in the preserved organism from its living condition*—Continued

Organism	Number of samples in which found	Form distorted	Size changed	Color changed	Pellicle or shell hurt	Collar destroyed	Flagella or cilia lost	Cirri or pseudopodia damaged	Nucleus made visible	Chloroplasts or chromatophores distorted	Inclusions rendered invisible	Diagnostic feature in formalin specimen
Mastigophora—Continued.												
Zoomastigoda:												
Anthophysa vegetans	16	[7] x	---	---	---	---	x	---	---	---	---	Doubtful.
Bicoeca lacustris	6	x	---	---	---	x	x	---	x	---	---	General shape.
Bodo angustus	3	x	---	---	---	---	x	---	---	---	---	Unrecognizable.
caudatus	10	x	---	---	---	---	x	---	x	---	---	Do.
Codomonas annulata	13	---	---	---	---	---	[3] x	---	---	---	---	Unchanged.
Cercobodo longicauda	3	x	---	---	---	---	x	---	---	---	---	Unrecognizable.
Desmarella moniliformis	18	x	---	---	---	x	x	---	x	---	---	Colony shape.
Dimorpha nutans	6	---	---	---	---	---	[4] x	---	---	---	---	Little change.
Domatomonas cylindrica	5	---	---	---	---	---	[3] x	---	---	---	---	Shell.
Mastigamoeba sp	3	x	---	---	---	---	x	x	---	---	---	Unrecognizable.
Monas sociabilis	3	x	---	---	---	---	---	---	---	---	---	Could be other species or Oicomonas.
socialis	3	[7] x	---	---	---	---	---	[5] ---	---	---	---	Do.
vivipara	3	---	---	---	---	---	---	---	---	---	---	Do.
vulgaris	3	---	---	---	---	---	---	---	---	---	---	Do.
Monosiga ovata	1	---	---	---	---	x	x	---	x	---	---	Doubtful.
Oicomonas termo	72	---	---	---	---	---	---	---	x	---	---	Could be other species or Monas.
Pleuromonas jaculans	3	x	x	---	---	---	---	---	x	---	---	Sometimes by long flagella.
Poteriodendron petiolatum	20	x	---	---	---	---	---	---	x	---	---	Shell.
Tetramitus rostratus	4	x	---	---	---	---	x	---	---	---	---	Unrecognizable.
Trepomonas agilis	11	---	---	---	---	---	x	---	---	---	---	Shape, flagella.
Rhizopoda:												
Acanthocystis aculeata	7	x	---	---	x	---	---	x	---	---	---	Doubtful.
Actinophrys sol	21	x	x	---	---	---	---	x	---	---	---	Unrecognizable.
Actinosphaerium eichorni	1	x	x	---	x	---	---	x	---	---	---	Do.
Amoeba proteus	4	x	x	---	---	---	---	x	x	---	---	Do.
radiosa	7	---	---	---	---	---	---	---	---	---	---	Almost unchanged.
verrucosa	2	x	---	---	x	---	---	x	---	---	---	Doubtful.
vespertilio	7	x	x	---	---	---	---	x	x	---	---	Do.
Arcella dentata	1	---	---	---	---	---	---	x	x	---	---	Shell.
vulgaris	8	---	---	---	---	---	---	x	x	---	---	Do.
Chlamydophrys sp	1	---	---	---	---	---	---	x	x	---	---	Doubtful.
Cochliopodium bilimbosum	3	x	x	---	x	---	---	x	---	---	---	Unrecognizable.
Difflugia coronata	1	---	---	---	---	---	---	x	---	---	---	Shell.
lebes	3	---	---	---	---	---	---	x	---	---	---	Do.
pyriformis	3	---	---	---	---	---	---	x	---	---	---	Do.
globosa	3	---	---	---	---	---	---	x	---	---	---	Do.
Euglypha ciliata	1	---	---	---	---	---	---	x	x	---	---	Do.
Gromia fluviatilis	---	x	x	---	x	---	---	x	---	---	---	Unrecognizable.[10]
Hartmanella hyalina	3	x	x	---	---	---	---	x	---	---	---	Do.
Hyalosphenia cuneata	3	---	---	---	---	---	---	x	---	---	---	Shell.
Nuclearia simplex	8	x	x	---	---	---	---	x	---	---	---	Unrecognizable.
Pamphagus mutabilis	---	---	---	---	---	---	---	x	---	---	---	Shell.
Paulinella chromatophora	3	---	---	---	x	---	---	x	---	---	---	Shell, chromatophores.
Pelomyxa palustris	2	x	x	---	---	---	---	x	---	---	---	Unrecognizable.
Pseudodifflugia gracilis	3	---	---	---	---	---	---	x	---	---	---	Shell; doubtful.
Raphidiophrys pallida	11	x	x	---	x	---	---	x	---	---	---	General shape; doubtful.
Trinema lineare	2	---	---	---	---	---	---	x	---	---	---	Shell.
Vahlkampfia albida	6	x	---	---	---	---	---	x	---	---	---	Unrecognizable.
guttula	3	x	---	---	---	---	---	x	---	---	---	Do.
limax	6	x	---	---	---	---	---	x	---	---	---	Do.
Infusoria:												
Ciliata:												
Actinobolus radians	5	---	---	---	---	---	[11] x	---	x	---	---	Shape, tentacles.
Amphisia sp	3	x	x	---	---	---	x	x	---	---	---	Unrecognizable.
Askenasia volvox	3	---	---	---	---	---	---	---	---	---	---	Unchanged.
Aspidisca costata	18	x	x	---	x	---	---	x	---	---	---	Unrecognizable.
Carchesium sp	11	x	x	---	---	---	---	---	---	---	---	Size, colony.
Chaenea teres	1	---	---	---	---	---	---	---	---	---	---	
Chilodonella cucullulus [13]	25	[2] x	x	---	---	---	---	---	---	---	---	Shape, oral basket.
uncinatus [13]	30	[2] x	x	---	---	---	---	---	x	---	---	Do.
spp. [13]	3	[2] x	x	---	---	---	---	---	x	---	---	Do.
Cinetochilum margaritaceum. [14]	8	x	---	---	---	---	x	---	---	---	---	Doubtful.

See footnotes at end of table.

TABLE 2.—*Changes in the preserved organism from its living condition*—Continued

Organism	Number of samples in which found	Form distorted	Size changed	Color changed	Pellicle or shell hurt	Collar destroyed	Flagella or cilia lost	Cirri or pseudopodia damaged	Nucleus made visible	Chloroplasts or chromatophores distorted	Inclusions rendered invisible	Diagnostic feature in formalin specimen
Infusoria—Continued.												
Ciliata—Continued.												
Codonella cratera	56	---	---	---	---	---	---	x	---	---	---	Shell.
Coleps hirtus	13	x	---	---	x	---	x	---	---	---	---	Genus sure; species doubtful.
Colpidium campylum	7	[18] x	---	---	---	---	[12] x	---	x	---	---	Cannot distinguish from Colpoda.
colpoda	12	[18] x	---	---	---	---	[12] x	---	x	---	---	Do.
Colpoda aspera	2	---	---	---	---	---	---	---	x	---	---	Doubtful.
cucullus	---	---	---	---	---	---	---	---	x	---	---	Do.
Cothurnia vaginicola	2	---	x	---	---	---	---	---	---	---	---	Shell.
Cyclidium spp	86	x	---	---	---	---	[12] x	---	---	---	---	Doubtful.
Didinium balbiani	6	---	---	---	---	---	---	---	---	---	---	Unchanged.
nasutum	3	---	---	---	---	---	---	---	---	---	---	Do.
Drepanomonas sp	1	x	---	---	x	---	x	---	---	---	---	Doubtful.
Epistylis spp	11	x	---	---	---	---	---	---	---	---	---	Do.
Euplotes spp	19	x	---	---	x	---	x	x	---	---	---	Species not definable.
Frontonia leucas	3	[16] x	---	x	---	---	[12] x	---	x	---	---	Doubtful.
Glaucoma frontata	3	---	---	---	---	---	---	---	---	---	---	Mouth, if it can be seen.
pyriformis	---	---	---	---	---	---	---	---	---	---	---	Shape and mouth.
scintillans	18	---	---	---	---	---	---	---	---	---	---	Do.
Halteria grandinella	40	x	---	---	---	---	---	[1] x	---	---	---	Spines, if undamaged.
Hastatella radians	6	---	---	---	---	---	---	---	---	---	---	Unchanged.
Holophrya sp	8	---	---	---	---	---	---	---	---	---	---	Trichites, but often cannot be seen.
Holosticha sp	2	x	x	---	---	---	x	x	---	---	---	Unrecognizable.
Lacrymaria elegans	2	---	---	---	---	---	---	---	---	---	---	Unchanged.
olor	4	---	---	---	---	---	---	---	---	---	---	Species doubtful, if contracted.
Lembus saprophilus	4	x	---	---	---	---	[12] x	---	x	---	---	Membranelle, unless damaged.
Lionotus fasciola	40	[1] x	---	---	---	---	---	---	---	---	---	Ciliation, shape.
lamella	2	[1] x	---	---	---	---	---	---	---	---	---	Ciliation lines, shape.
Loxocephalus granulosus	3	x	---	x	---	---	---	---	---	---	---	Shape, ciliation, if undamaged.
Loxodes magnus	2	[2] x	---	---	---	---	---	---	x	---	---	Shape, mouth.
Loxophyllum maleagris	3	[2] x	---	---	x	---	---	---	x	---	---	Shape, mouth, nuclei.
Mesodinum pulex	2	---	---	---	---	---	---	---	---	---	---	Practically unchanged.
Nassula aurea	3	---	---	---	---	---	---	---	---	---	---	Shape, mouth, trichites.
Onychodromus grandis	2	x	x	---	---	---	x	---	---	---	---	Unrecognizable.
Opercularia spp	6	x	x	---	---	---	---	---	x	---	---	Species doubtful.
Oxytricha fallax	2	x	x	---	x	---	x	x	---	---	---	Doubtful.
pelionella	21	x	x	---	x	---	x	x	---	---	---	Do.
Paramecium caudatum	37	x	---	---	---	---	---	---	x	---	---	Size nuclei, mouth.
putrinum	2	---	---	---	---	---	---	---	---	---	---	Almost unchanged.
Prorodon spp	3	x	---	---	---	---	---	---	---	---	---	Species not identifiable.
Stentor coeruleus	2	x	---	x	---	---	---	---	---	---	---	Size, ciliation, species unidentifiable.
polymorpha	12	x	---	---	---	---	---	---	---	---	---	Do.
Strombidium sulcatum	37	---	---	---	---	---	---	---	---	---	---	Almost unchanged.
Strobilidium humile	22	---	---	---	---	---	---	---	---	---	---	Do.
Spirostomum teres	2	x	---	---	---	---	---	---	x	---	---	Elongate shape nuclei.
Stylonichia mytilus	8	x	x	---	x	---	x	x	---	---	---	Unrecognizable.
pustulata	4	x	x	---	x	---	x	x	---	---	---	Do.
Trachelocerca sp	2	x	---	---	---	---	---	---	---	---	---	General shape, mouth.
Trochiloides dubia	2	x	x	---	x	---	x	---	---	---	---	Unrecognizable.
Tintinnidium fluvatile	5	---	---	---	---	---	x	---	---	---	---	Shell.
Urocentrum turbo	2	[2] x	---	---	---	---	---	---	---	---	---	General shape, ciliation.
Uroleptus pisces	2	x	x	---	x	---	x	---	---	---	---	Unrecognizable.
Uronema marina	7	---	---	---	---	---	[12] x	---	---	---	---	Unrecognizable if memb. destroyed.

See footnotes at end of table.

TABLE 2.—*Changes in the preserved organism from its living condition*—Continued

Organism	Number of samples in which found	Form distorted	Size changed	Color changed	Pellicle or shell hurt	Collar destroyed	Flagella or cilia lost	Cirri or pseudopodia damaged	Nucleus made visible	Chloroplasts or chromatophores distorted	Inclusions rendered invisible	Diagnostic feature in formalin specimen
Infusoria—Continued.												
Ciliata—Continued.												
Urotricha farcta	51	x	---	---	---	---	x	---	---	---	---	Sometimes shape and food vacuoles.
Vorticella campanula	4	x	---	---	---	---	---	---	---	---	---	Species unrecognizable.
microstoma	8	x	---	---	---	---	---	---	---	---	---	Do.
spp.	80	---	---	---	---	---	---	---	---	---	---	Do.

[1] Only when the spines are not lost.
[2] This occurs in the majority of cases.
[3] Color usually bleaches to a pale green; occasionally remains olive green.
[4] Possible when living forms have been observed.
[5] There is a tendency to shrink away from the membrane.
[6] The green fades quickly and badly.
[7] Colonies frequently dissociate easily.
[8] The light brown color of the pellicle usually fades.
[9] The pellicle often splits open but is not lost.
[10] Sometimes recognizable by its pseudopodia.
[11] The tenacles remain intact, and the cilia frequently do.
[12] Membranelles or undulating membranes damaged.
[13] The trichocysts or trichites are no longer visible.
[14] The trichocysts or trichites remain intact.
[15] There is a general diminution in size.

Where no numbers are found in column 1, the species listed was studied from bottom samples, or was included with some closely allied form.

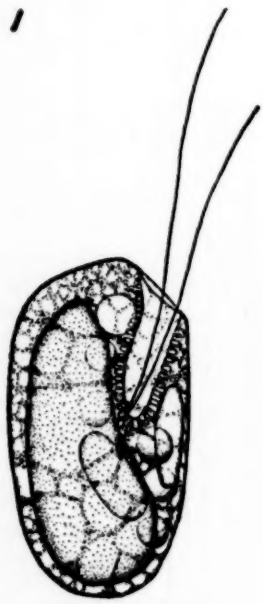

FIGURE 1.—*Cryptomonas erosa*, living. Side view, as normally seen.

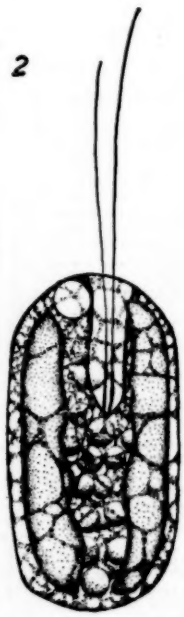

FIGURE 2.—*Cryptomonas erosa*, living. Dorsal view.

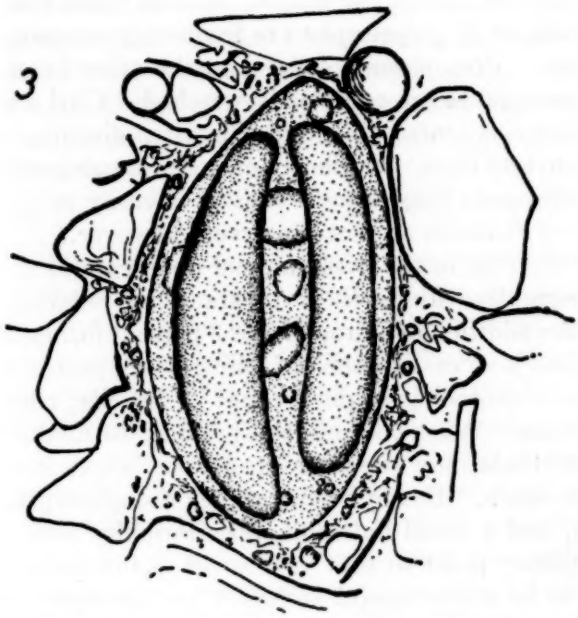

FIGURE 3.—*Cryptomonas erosa*, preserved. Animal incorporated in mass of debris. Note the disorganization of protoplasmic structure.

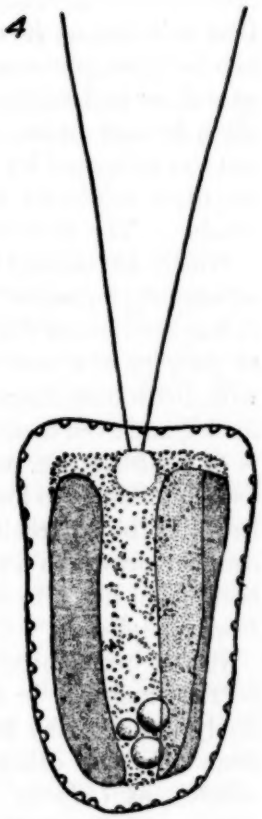

FIGURE 4.—*Hymenomonas roseola*, living.

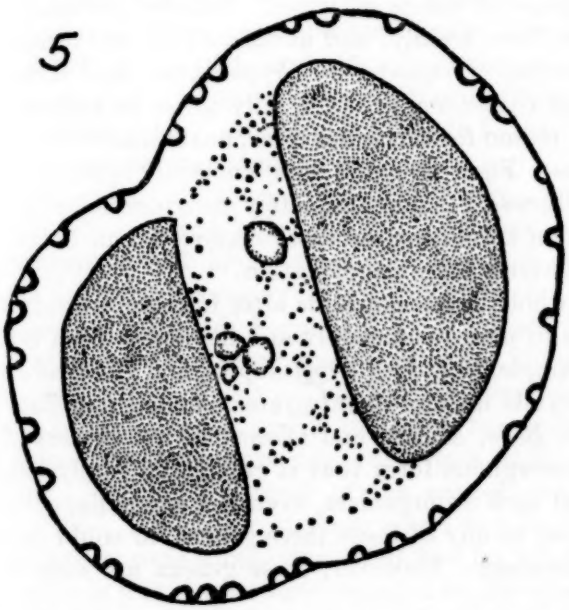

FIGURE 5.—*Hymenomonas roseola*, preserved. Flagella gone, shape distorted, chromatophores distorted.

FIGURE 6.—View of the diagnostic surface pits of *Hymenomonas roseola* in a preserved animal.

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Shells or tests rarely change. The thick pellicle of many Euglenida often allows them to be left relatively unchanged, whereas those with thin pellicles, as *E. viridis* or *E. polymorpha* are frequently unrecognizable after preservation. Protoplasmic collars, on the other hand, as well as undulating membranes are completely wrecked. Cirri are often broken up into their component cilia, and cilia often disappear, but are indicated by punctate lines. Curiously enough, pseudopodia are often relatively unchanged; thus *Amoeba radiosa* is easily recognizable. The filopodia of *Heliozoa* are not preserved, however.

Nuclei are usually observable in the living animal upon careful observation; formalin frequently causes them to stand out sharply. It has been found that the addition of a drop of 2 or 3 percent formalin at the edge of a cover glass is an easy method of killing living protozoa with little distortion, and providing a quick count of flagella, cilia, nuclei, and even membranes. When one animal is present, the method is of doubtful use, as currents may sweep it into debris, where it is usually difficult to locate again. But by practice, even a single organism may be so treated, and a small bottle of weak formalin with a dropper drawn to a capillary point so that very small quantities can be applied has proved to be a very useful accessory for the study of fresh samples.

It has been noted in the preceding that some organisms seem to become included in a mass of debris at times. Samples containing finely divided clay form flocs readily, and at times flocs are formed from debris of other types. *Chrysococcus*, *Cryptomonas*, and a few ciliates, as *Colpoda* and *Cyclidium*, are unusually prone to inclusion within such flocs. The reason for this is not clear, but it makes counting very difficult at times. Figures 1 and 2 show a normal *Cryptomonas* and figure 3 shows a well preserved one completely incorporated within such a floc. Such hidden specimens, or those distorted, can be distinguished only at a relatively high magnification.

A few organisms are wholly unrecognizable after formalin preservation. *Chroomonas* goes to pieces completely and has never been recognized in a formalin sample. So does *Uroglenopsis*, and *Chromulina ovalis* almost at once swells up and disintegrates. Small flagellates belonging to the genera *Bodo*, *Monas*, and *Oicomonas* are preserved, but often in such an amorphous form that it cannot be surely said they are organisms; and such an organism, even if a single flagellum is preserved, could belong to any of these three genera, or could be a dissociated cell of *Anthophysa*. However, these genera are difficult even when alive.

On the whole, such a study indicates that familiarity with the living organism is the prime requisite for recognition of that organism after

formalin preservation, but with such familiarity most protozoa can be identified with respect to genera and probably to species after preservation. It also shows that a formalin preservation may be a definite aid in counting and identification. Finally, it shows that the characteristics of preserved organisms may be indicated in such way that the inexperienced observer may be given a key to the identification of many.

SUMMARY

For a very exact qualitative and quantitative study of plankton protozoa of the Scioto River of Ohio, unkilled samples were studied every other week in 1937. In the intervening weeks, 5 percent formalin preserved samples were studied. Organisms were secured as the catch from centrifuging 200 to 100 ml of raw river water. The catch was counted by drops, one drop always being made to equal 1 or 2 ml of raw water. Pipettes delivering 20 to 24 drops per ml were employed, because a drop of this size would spread uniformly under a cover glass 25 mm square without extending unduly beyond the edge. Ten or 20 paths were counted, two paths at right angles across the middle of one drop, and this was repeated for 5 or 10 drops. This number of paths was chosen because it represented either an entire drop at 125 diameters or one-fourth drop at 537.5 diameters, the magnifications employed. Counting parts of 5 or 10 drops gave a representative sample and allowed little time for the aggregation of living forms such as positively phototactic green flagellates. It also allowed free use of either high or low magnification for purposes of identification. An effort was made to use the same procedure for every sample examined.

More than 275 species of protozoa were identified, most of them in both unkilled and killed samples. If they were found in sufficient numbers in both kinds of samples, the effect of formalin preservation was noted on as many of the following ten characteristics as the organism possessed: Form, size, color, pellicle or shell, collar, flagella or cilia, cirri or pseudopodia, nucleus, chloroplasts or chromatophores, and inclusions. The effect of the preservative on 234 species was carefully noted and is indicated herewith in tabular form. In addition, the diagnostic feature, or lack of it, is also indicated in the table. About 33 percent of the animals could not be specifically identified, and many of these could not be identified as to genus. Only a few were totally destroyed, but the large number whose identification is lost or questionable indicates the great advantage of studying unkilled samples.

AN UNUSUAL CASE OF CYANIDE POISONING DURING FUMIGATION [1]

By C. L. WILLIAMS, *Assistant Surgeon General in Charge of the Division of Foreign and Insular Quarantine and Immigration*

In the vast majority of cases, persons poisoned through *inhalation* of cyanide gases either die promptly or recover rapidly and completely. As there is no residuum of poison in the stomach, and as that in the lungs, blood, and tissues is rapidly eliminated, once he is removed from the gas, the victim proceeds directly to recovery unless his tissues have been too badly damaged, in which case death, as a rule, follows shortly. It is for this reason that the rare cases that exhibit prolonged symptoms warrant report.

REPORT OF CASE

A fumigator (G. A.), while adjusting an apparatus spraying liquid hydrocyanic acid into a building, became dizzy and went into the open air where he removed his gas mask. Feeling better after a short time, he replaced his gas mask and went back into the building under fumigation. Shortly thereafter he was observed to fall, whereupon other fumigators went in and brought him out into the open air, removed his gas mask, and summoned the local fire department. The firemen arrived within a short period of time and found him unconscious, not breathing, and apparently dead. Artificial respiration, combined with oxygen inhalation, was instituted and maintained for an hour and a half, at the end of which time the patient arrived at a hospital, when breathing was noted as very light and of Cheyne-Stokes character; the pulse was faint but palpable; heart sounds were barely discernible with a stethoscope; and the blood pressure was 90 systolic, 58 diastolic. The victim was still in a deep coma and markedly cyanotic. At the hospital 20 cc of a solution containing 0.6 grams of sodium nitrite, followed immediately by 100 cc of a solution containing 50 grams of sodium thiosulfate, as advised by Chen, [2] were promptly administered intravenously. There was immediate improvement, as shown by return of normal color and increase of blood pressure to 102 systolic, 66 disastolic. Oxygen inhalation was continued at the hospital, and the patient was given hypodermic injections of coramine, adrenalin, and caffeine sodium benzoate. Hypodermoclysis of physiological saline solution every 8 hours and intravenous administrations of 50 cc of 50 percent glucose solution

[1] The medical data concerning this case were furnished by Dr. T. A. Kinder, Jr., of Brownsville, Tex. The sodium nitrite and sodium thiosulfate solutions were made available by the fumigation station of the Department of Agriculture at Brownsville, where a supply is kept on hand for emergency use.

[2] Chen, K. K., Charles, L. R., and Clowes, G. H. A.: Comparative values of several antidotes in cyanide poisoning. Am. J. Med. Sciences, December 1934.

twice daily were instituted. Coramine was continued, and sodium amytal was administered at times.

The patient remained unconscious for three days, over which period oxygen was administered. During the first two of these days he became cyanotic whenever oxygen was discontinued. Convulsions appeared about an hour after admission to the hospital and persisted intermittently for 2 days, at times being quite severe. After the third day, consciousness returned; but the patient was more or less irrational and developed maniacal episodes necessitating restraint. Intermittent fever, ranging from 103.6° to 99° F., was present during the first three days, after which the temperature was generally subnormal, not going below 97.8°, however. The patient was discharged from the hospital on the seventh day in good physical condition but still irrational and at times violent.

Twenty-five days after the poisoning, the patient was reported as very much improved, but still showing some mental symptoms.

DEATHS DURING WEEK ENDED NOVEMBER 5, 1938

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Nov. 5, 1938	Corresponding week, 1937
Data from 88 large cities of the United States:		
Total deaths	7,926	[1] 7,556
Average for 3 prior years	[1] 7,970	
Total deaths, first 44 weeks of year	356,581	380,983
Deaths under 1 year of age	492	[1] 474
Average for 3 prior years	[1] 513	
Deaths under 1 year of age, first 44 weeks of year	23,152	24,516
Data from industrial insurance companies:		
Policies in force	68,302,390	69,899,046
Number of death claims	11,545	10,571
Death claims per 1,000 policies in force, annual rate	8.8	7.9
Death claims per 1,000 policies, first 44 weeks of year, annual rate	9.3	9.8

[1] Data for 86 cities.

PREVALENCE OF DISEASE

No health department, State of local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers.

In these and the following tables, a zero (0) indicates a positive report and has the same significance as any other figure, while leaders (----) represent no report, with the implication that cases or deaths may have occurred but were not reported to the State health officer.

Cases of certain diseases reported by telegraph by State health officers for the week ended Nov. 12, 1938, rates per 100,000 population (annual basis), and comparison with corresponding week of 1937 and 5-year median

Division and State	Diphtheria				Influenza				Measles			
	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases	1933–37 median	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases	1933–37 median	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases	1933–37 median
NEW ENG.												
Maine	30	5	2	2	43	7	----	----	67	11	35	20
New Hampshire	0	0	0	0	----	----	4	----	10	1	65	1
Vermont	0	0	4	1	----	----	----	----	----	----	107	21
Massachusetts	2	2	1	8	----	----	----	----	135	115	48	65
Rhode Island	0	0	1	1	----	----	----	----	8	1	----	3
Connecticut	18	6	4	4	6	2	3	2	69	23	7	32
MID. ATL.												
New York	6	14	28	39	[1] 10	[1] 14	[1] 10	[1] 10	55	137	70	251
New Jersey	5	4	29	17	4	3	16	11	13	11	162	26
Pennsylvania	21	41	54	54	----	----	----	----	31	60	899	128
E. NO. CEN.												
Ohio	70	91	56	56	----	----	23	6	11	14	237	56
Indiana	47	31	33	69	18	12	29	29	15	10	24	9
Illinois	30	46	49	49	5	7	10	12	11	16	260	18
Michigan [2]	22	20	23	16	----	----	----	1	58	54	41	26
Wisconsin	5	3	4	6	75	42	36	24	107	60	59	52
W. NO. CEN.												
Minnesota	12	6	12	12	----	----	----	1	240	122	6	19
Iowa	37	18	5	13	10	5	----	1	41	20	1	1
Missouri	27	21	55	57	5	4	36	36	12	9	436	23
North Dakota	37	5	0	1	7	1	----	----	1,861	252	1	13
South Dakota	0	0	6	1	15	2	----	----	211	28	----	1
Nebraska	8	2	6	6	----	----	1	----	4	1	2	2
Kansas	28	10	18	18	14	5	2	----	14	5	4	4

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Nov. 12, 1938, rates per 100,000 population (annual basis), and comparison with corresponding week of 1937 and 5-year median—Continued

Division and State	Diphtheria				Influenza				Measles			
	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases	1933–37 median	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases	1933–37 median	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases	1933–37 median
SO. ATL.												
Delaware	0	0	0	1					60	3		2
Maryland [1]	28	9	25	25	16	5	9	7	71	23	7	7
Dist. of Col	58	7	6	14	17	2		1	17	2	1	2
Virginia	156	81	66	86	210	109			12	6	35	35
West Virginia	36	13	23	51	39	14	28	28	45	16	85	28
North Carolina [1]	133	89	86	105			4	5	234	157	155	38
South Carolina [1]	47	17	21	21	637	229	220	220	42	15	5	5
Georgia [1]	68	40	37	47	61	36			22	13		
Florida	3	1	18	12			6		19	6	5	
E. SO. CEN.												
Kentucky	73	41	38	68	91	51	2	10	21	12	25	36
Tennessee	78	48	24	36	50	28	50	30	14	8	33	9
Alabama [1]	41	23	44	44	112	62	66	41	5	3	1	1
Mississippi [1 3]	62	24	25	25								
W. SO. CEN.												
Arkansas	61	24	30	30	143	56	19	19	8	3	11	3
Louisiana	51	21	19	27	7	3	16	13	152	62		2
Oklahoma	14	7	25	18	43	21	25	25	14	7	3	3
Texas [1]	81	96	65	73	124	147	170	137	5	6	19	19
MOUNTAIN												
Montana	0	0	2	3	29	3		5	1,354	140	2	2
Idaho	0	0	2	1	32	3	3		307	29	17	8
Wyoming	0	0	0	2					44	2	1	2
Colorado	122	25	8	8	151	31			10	2	13	6
New Mexico	62	5	8	8	25	2	2	2	62	5	26	15
Arizona	25	2	10	3	696	55	37	15	63	5	2	2
Utah [1]	10	1	54	0	20	2			342	34	59	14
PACIFIC												
Washington	0	0	5	3	3	1	1	1	66	21	18	34
Oregon	20	4	13	1	66	13	18	18	36	7	14	14
California [1]	24	28	33	49	24	28	21	27	177	209	28	139
Total	37	926	1,077	1,303	49	1,005	867	766	72	1,746	3,029	1,757
45 weeks	22	24,495	22,738	30,393	60	54,789	281,108	146,905	704	772,659	256,563	351,071

Division and State	Meningitis, meningococcus				Poliomyelitis				Scarlet fever			
	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases	1933–37 median	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases	1933–37 median	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases	1933–37 median
NEW ENG.												
Maine	0	0	0	0	18	3	0	0	61	10	13	14
New Hampshire	0	0	0	0	0	0	0	0	10	1	2	8
Vermont	0	0	0	0	0	0	0	0	136	10	14	11
Massachusetts	0	0	0	1	0	0	2	2	90	76	125	125
Rhode Island	0	0	0	0	0	0	1	0	54	7	25	12
Connecticut	0	0	0	0	0	0	2	1	96	32	47	47
MID. ATL.												
New York	0.8	2	6	6	1.2	3	5	6	89	222	266	321
New Jersey	0	0	3	1	0	0	3	3	43	36	54	67
Pennsylvania	1	2	4	4	1	2	4	6	91	178	331	354

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Nov. 12, 1938, rates per 100,000 population (annual basis), and comparison with corresponding week of 1937 and 5-year median—Continued

Division and State	Meningitis, meningococcus				Poliomyelitis				Scarlet fever			
	Nov. 12, 1938, rate	Nov. 12, 1938 cases	Nov. 13, 1937, cases	1933–37 median	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases	1933–37 median	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases	1933–37 median
E. NO. CEN.												
Ohio	3	4	3	1	0.8	1	1	3	226	292	317	317
Indiana	1.5	1	2	1	0	0	0	2	156	104	147	147
Illinois	0	0	3	3	0	0	4	4	142	215	382	382
Michigan [1]	0	0	1	1	2	2	3	3	300	278	354	206
Wisconsin	0	0	0	0	1.8	1	4	1	246	138	145	210
W. NO. CEN.												
Minnesota	0	0	0	0	0	0	4	4	124	63	94	94
Iowa	0	0	2	2	2	1	3	3	102	50	135	80
Missouri	1.3	1	2	2	1.3	1	2	2	112	86	204	100
North Dakota	0	0	0	0	0	0	0	0	177	24	51	40
South Dakota	0	0	1	0	0	0	-3	1	211	28	8	11
Nebraska	0	0	0	0	0	0	1	1	31	8	21	23
Kansas	0	0	0	0	0	0	1	4	285	102	98	98
SO. ATL.												
Delaware	0	0	0	0	0	0	0	0	120	6	10	5
Maryland [1]	0	0	5	2	0	0	0	1	53	17	72	86
Dist. of Col	0	0	0	1	0	0	0	0	33	4	9	10
Virginia	4	2	5	3	0	0	1	1	125	65	35	56
West Virginia	2.8	1	5	1	0	0	0	1	235	84	100	146
North Carolina [1]	0	0	1	1	1.5	1	2	2	167	112	72	90
South Carolina [1]	0	0	0	0	0	0	1	1	28	10	12	12
Georgia [1]	0	0	2	2	1.7	1	2	1	51	30	36	22
Florida	0	0	3	0	0	0	1	1	12	4	5	6
E. SO. CEN.												
Kentucky	1.8	1	6	4	0	0	0	1	202	113	107	107
Tennessee	4	2	0	0	0	0	0	1	137	76	42	71
Alabama [1]	4	2	4	0	0	0	1	1	61	34	29	23
Mississippi [1 2]	2.6	1	0	0	5	2	5	0	28	11	20	22
W. SO. CEN.												
Arkansas	0	0	1	0	2.5	1	3	1	41	16	34	23
Louisiana	2.4	1	0	1	0	0	5	1	56	23	11	17
Oklahoma	0	0	0	0	0	0	1	1	65	32	68	20
Texas [1]	0	0	2	1	0.8	1	9	4	60	71	101	56
MOUNTAIN												
Montana	0	0	0	0	0	0	1	0	213	22	37	37
Idaho	0	0	0	0	0	0	0	0	116	11	33	33
Wyoming	0	0	0	0	0	0	0	0	67	3	6	16
Colorado	5	1	0	0	0	0	0	0	200	41	19	42
New Mexico	0	0	0	0	0	0	1	0	74	6	36	25
Arizona	0	0	0	0	13	1	0	0	76	6	7	17
Utah [2]	0	0	1	0	0	0	0	0	121	12	50	29
PACIFIC												
Washington	0	0	0	0	3	1	5	4	57	18	45	43
Oregon	0	0	1	0	5	1	4	3	254	50	31	45
California [1]	0.8	1	4	2	0	0	14	11	156	184	133	180
Total	0.9	22	67	67	0.9	23	99	112	122	3,021	3,993	4,087
45 weeks	2.3	2,553	4,861	4,861	1.4	1,566	9,102	6,871	144	160,475	191,424	191,424

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Nov. 12, 1938, rates per 100,000 population (annual basis), and comparison with corresponding week of 1937 and 5-year median—Continued

Division and State	Smallpox				Typhoid and paratyphoid fever				Whooping cough		
	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases	1933–37 median	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases	1933–37 median	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases
NEW ENG.											
Maine	0	0	0	0	12	2	0	1	378	62	24
New Hampshire	0	0	0	0	0	0	0	0	0	0	3
Vermont	0	0	0	0	14	1	0	0	1,021	75	27
Massachusetts	0	0	0	0	1	1	3	3	105	89	79
Rhode Island	0	0	0	0	0	0	0	0	184	24	8
Connecticut	0	0	0	0	3	1	1	1	222	74	16
MID. ATL.											
New York	0	0	0	0	3	7	9	13	195	485	397
New Jersey	0	0	0	0	2	2	5	4	193	161	75
Pennsylvania	0	0	0	0	6	11	21	21	107	208	------
E. NO. CEN.											
Ohio	0	0	0	0	5	6	9	16	148	191	181
Indiana	12	8	20	5	5	3	3	5	15	10	26
Illinois	2	3	9	1	4	6	12	17	366	553	92
Michigan [3]	6	6	1	0	3	3	2	7	209	194	------
Wisconsin	14	8	3	15	4	2	1	2	674	378	154
W. NO. CEN.											
Minnesota	12	6	13	7	0	0	0	0	31	16	80
Iowa	2	1	20	3	4	2	5	3	45	22	34
Missouri	10	8	15	2	7	5	5	7	14	11	71
North Dakota	0	0	30	1	52	7	0	1	30	4	20
South Dakota	0	0	11	1	0	0	3	2	68	9	45
Nebraska	4	1	0	0	0	0	1	0	4	1	7
Kansas	3	1	4	2	11	4	1	6	62	22	46
SO. ATL.											
Delaware	0	0	0	0	0	0	0	1	100	5	4
Maryland [3]	0	0	0	0	9	3	4	8	50	16	65
Dist. of Col	0	0	0	0	0	0	0	1	108	13	4
Virginia	0	0	0	0	6	3	10	17	39	20	47
West Virginia	0	0	0	0	20	7	4	10	64	23	33
North Carolina [3]	0	0	0	0	6	4	11	6	248	166	109
South Carolina [3]	0	0	0	0	8	3	2	6	58	21	38
Georgia [3]	0	0	0	0	3	2	18	12	7	4	16
Florida	0	0	2	0	0	0	0	0	12	4	5
E. SO. CEN.											
Kentucky	4	2	2	0	14	8	8	20	7	4	67
Tennessee	0	0	0	0	4	2	10	10	43	24	33
Alabama [3]	0	0	0	0	4	2	1	5	50	28	6
Mississippi [3 3]	0	0	4	0	21	8	5	7	------	------	------
W. SO. CEN.											
Arkansas	8	3	3	1	18	7	13	4	33	13	51
Louisiana	2	1	1	0	17	7	9	12	42	17	3
Oklahoma	2	1	4	4	6	3	19	18	10	5	340
Texas [3]	9	11	4	1	19	22	50	41	42	50	128
MOUNTAIN											
Montana	39	4	18	5	39	4	3	3	242	25	15
Idaho	11	1	11	1	42	4	0	2	42	4	11
Wyoming	22	1	2	1	0	0	0	0	222	10	23
Colorado	29	6	2	3	44	9	0	1	180	37	3
New Mexico	0	0	0	0	37	3	8	10	235	19	58
Arizona	0	0	0	0	51	4	1	1	13	1	------
Utah [3]	0	0	1	0	10	1	0	0	211	21	14

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Nov. 12, 1938, rates per 100,000 population (annual basis), and comparison with corresponding week of 1937 and 5-year median—Continued

Division and State	Smallpox				Typhoid and paratyphoid fever				Whooping cough		
	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases	1933–37 median	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases	1933–37 median	Nov. 12, 1938, rate	Nov. 12, 1938, cases	Nov. 13, 1937, cases
PACIFIC											
Washington	3	1	29	22	25	8	2	3	97	31	75
Oregon	5	1	30	1	5	1	4	4	51	10	34
California [3]	4	5	1	1	6	7	7	13	69	82	221
Total	3	79	240	105	7	185	270	328	133	3,242	2,839
45 weeks	12	13,271	9,101	5,874	12	13,129	13,879	15,996	167	182,892	-------

[1] New York City only.
[2] Period ended earlier than Saturday.
[3] Typhus fever, week ended Nov. 12, 1938, 51 cases as follows: North Carolina, 1; South Carolina, 4; Georgia, 30; Alabama, 5; Mississippi, 2; Texas, 8; California, 1.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week:

State	Meningitis, meningococcus	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid and paratyphoid fever
August 1938										
South Carolina	-------	226	284	1,656	53	165	3	18	0	76
September 1938										
Alaska	0	0	4	-------	1	-------	0	10	0	0
South Carolina	-------	366	631	2,297	20	161	3	39	0	77
October 1938										
District of Columbia	1	49	3	-------	8	1	6	45	0	11
Maine	1	10	3	-------	48	-------	[1] 4	41	0	9
New Jersey	2	36	49	3	50	-------	5	154	0	10
West Virginia	9	119	53	-------	24	-------	1	390	0	41
Wyoming	0	2	1	-------	21	-------	1	28	1	2

[1] Delayed report.

Summary of monthly reports from States—Continued

August 1938

South Carolina:	Cases
Chickenpox	9
Dengue	2
Diarrhea	605
German measles	5
Hookworm disease	102
Mumps	51
Ophthalmia neonatorum	2
Rabies in animals	19
Rocky Mountain spotted fever	3
Septic sore throat	8
Tetanus	3
Typhus fever	21
Undulant fever	1
Whooping cough	237

September 1938

Alaska:	
Chickenpox	5
Dysentery (bacillary)	1
Impetigo contagiosa	4
Whooping cough	10
South Carolina:	
Chickenpox	8
Dengue	3
Diarrhea	569
German measles	1
Hookworm disease	129

September 1938—Continued

South Carolina—Contd.	Cases
Mumps	35
Ophthalmia neonatorum	8
Rabies in animals	18
Septic sore throat	12
Tularaemia	2
Typhus fever	26
Undulant fever	5
Whooping cough	290

October 1938

Anthrax:	
New Jersey	1
Chickenpox:	
District of Columbia	26
Maine	158
New Jersey	433
West Virginia	144
Wyoming	24
Dysentery:	
New Jersey (amoebic)	1
New Jersey (bacillary)	4
Encephalitis, epidemic or lethargic:	
New Jersey	1
German measles:	
Maine	9
New Jersey	29
Wyoming	2

October 1938—Continued

Mumps:	Cases
Maine	27
New Jersey	184
West Virginia	22
Wyoming	8
Ophthalmia neonatorum:	
New Jersey	13
Rabies in animals:	
New Jersey	75
Rabies in man:	
New Jersey	1
Septic sore throat:	
Maine	2
New Jersey	21
West Virginia	5
Wyoming	3
Trichinosis:	
New Jersey	1
Tularaemia:	
New Jersey	2
Undulant fever:	
Maine	2
New Jersey	3
Vincent's infection:	
Maine	8
Whooping cough:	
District of Columbia	36
Maine	176
New Jersey	762
West Virginia	85
Wyoming	14

PLAGUE INFECTION IN FLEAS FROM GROUND SQUIRRELS IN ELDORADO COUNTY AND IN GROUND SQUIRRELS IN PLUMAS COUNTY, CALIFORNIA

Under date of November 4, 1938, Dr. W. M. Dickie, Director of Public Health of California, reported plague infection proved in a pool of 15 fleas from 2 *beecheyi* squirrels from the Emerald Bay Resort, 2 miles north of Bayview Resort, Eldorado County, and in organs from 10 golden mantled squirrels collected at Bailey Creek, 8 miles west of Westwood, Plumas County.

WEEKLY REPORTS FROM CITIES

City reports for week ended November 5, 1938

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table.

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Data for 90 cities:											
5-year average	269	118	35	386	512	1,007	7	346	46	579	----
Current week [1]	184	96	33	544	410	787	5	317	33	1,348	----
Maine:											
Portland	0	1	0	1	3	1	0	1	0	4	16
New Hampshire:											
Concord	0	----	0	1	0	0	0	0	0	0	8
Manchester	0	----	0	0	0	0	0	0	0	0	16
Nashua	0	----	0	0	1	0	0	0	0	0	8
Vermont:											
Burlington	0	----	0	0	0	1	0	0	0	0	10
Rutland	0	----	0	0	0	0	0	0	0	0	7

[1] Figures for Barre, Vt., Flint, Mich., and Seattle, Wash., estimated; reports not received.

City reports for week ended November 5, 1938—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Massachusetts:											
Boston	0	------	0	8	11	26	0	8	1	35	206
Fall River	0	------	0	0	3	1	0	0	0	0	29
Springfield	0	------	0	9	1	2	0	0	2	4	42
Worcester	0	------	0	0	2	0	0	0	0	10	46
Rhode Island:											
Pawtucket	0	------	0	0	0	0	0	0	0	5	12
Providence	0	------	0	0	1	2	0	2	0	17	53
Connecticut:											
Bridgeport	0	------	0	0	1	1	0	1	0	3	31
Hartford	0	------	0	1	3	2	0	1	1	0	39
New Haven	0	------	0	0	3	0	0	0	0	12	36
New York:											
Buffalo	0	------	1	9	6	26	0	9	0	27	148
New York	12	10	3	13	75	46	0	73	9	178	1,323
Rochester	0	2	0	8	3	3	0	3	0	3	72
Syracuse	0	------	0	4	0	7	0	0	0	18	37
New Jersey:											
Camden	0	------	1	0	3	1	0	1	0	0	26
Newark	0	1	0	1	3	7	0	4	0	21	83
Trenton	2	------	0	1	1	3	0	1	0	2	46
Pennsylvania:											
Philadelphia	2	2	2	7	18	27	0	25	2	78	516
Pittsburgh	2	2	3	0	15	30	0	9	1	19	165
Reading	14	------	0	1	0	0	0	0	0	2	21
Scranton	0	------	--------	1	-------	0	0	-------	1	22	--------
Ohio:											
Cincinnati	16	------	0	0	10	12	0	6	1	3	132
Cleveland	1	7	2	3	6	19	0	8	0	42	157
Columbus	13	------	0	0	2	9	0	4	0	1	86
Toledo	0	2	2	1	5	16	0	6	0	6	73
Indiana:											
Anderson	0	------	0	0	0	3	0	0	0	0	8
Fort Wayne	0	------	0	0	2	1	0	1	0	0	33
Indianapolis	8	------	1	2	10	24	2	0	2	3	90
South Bend	0	------	0	0	2	3	0	0	0	0	13
Terre Haute	0	------	0	1	0	6	0	0	0	0	22
Illinois:											
Alton	1	------	0	0	1	0	0	0	0	1	10
Chicago	26	6	0	10	36	108	0	33	0	370	662
Elgin	0	------	0	1	2	4	0	0	0	1	12
Moline	0	------	0	0	0	1	0	0	0	3	7
Springfield	0	------	0	1	2	0	0	0	0	2	17
Michigan:											
Detroit	14	------	1	5	7	80	0	9	1	103	232
Grand Rapids	0	------	0	5	3	19	0	0	0	3	37
Wisconsin:											
Kenosha	0	------	0	0	0	2	0	0	0	3	9
Madison	0	------	0	1	1	2	0	0	0	9	5
Milwaukee	0	------	0	2	4	29	0	3	0	174	98
Racine	0	------	0	0	0	3	0	0	0	8	13
Superior	0	------	0	0	0	2	0	0	0	13	7
Minnesota:											
Duluth	0	------	0	0	0	1	3	1	0	10	16
Minneapolis	0	------	1	32	5	19	0	2	0	12	116
St. Paul	0	------	0	23	7	7	0	2	1	5	65
Iowa:											
Cedar Rapids	0	------	--------	0	-------	1	0	-------	0	2	--------
Davenport	2	------	--------	0	-------	1	0	-------	0	0	--------
Des Moines	0	------	--------	0	-------	10	0	-------	0	0	23
Sioux City	0	------	--------	6	-------	3	0	-------	0	2	--------
Waterloo	7	------	--------	0	-------	5	0	-------	0	3	--------
Missouri:											
Kansas City	1	------	0	0	7	17	0	5	0	0	97
St. Joseph	0	------	0	0	3	3	0	0	0	0	30
St. Louis	9	------	0	1	9	32	0	6	0	4	220
North Dakota:											
Fargo	0	------	0	162	0	1	0	0	0	0	2
Grand Forks	3	------	--------	0	-------	3	0	-------	0	0	--------
Minot	0	------	0	0	0	1	0	0	0	0	5
South Dakota:											
Aberdeen	0	------	--------	0	-------	0	0	-------	0	0	--------
Sioux Falls	0	------	0	1	0	2	0	0	0	0	11
Nebraska:											
Lincoln	1	------	--------	0	-------	2	0	-------	0	0	--------
Omaha	0	------	0	0	9	4	0	2	0	0	65

City reports for week ended November 5, 1938—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Kansas:											
Lawrence	0	2	0	0	0	0	0	0	0	0	7
Topeka	0	----	0	0	0	7	0	0	0	0	1
Wichita	0	----	0	0	4	7	0	0	0	3	22
Delaware:											
Wilmington	2	----	0	0	3	3	0	0	0	1	26
Maryland:											
Baltimore	4	8	2	19	14	10	0	5	2	31	207
Cumberland	0	----	0	0	0	0	0	0	0	1	15
Frederick	0	----	0	0	0	0	0	0	0	0	4
Dist. of Col.:											
Washington	4	1	1	0	6	8	0	7	2	10	144
Virginia:											
Lynchburg	3	----	0	0	0	1	0	0	0	1	12
Norfolk	1	----	0	0	4	6	0	1	0	0	30
Richmond	1	----	0	0	3	8	0	4	1	0	50
Roanoke	0	----	0	0	0	0	0	0	0	0	11
West Virginia:											
Charleston	0	----	2	0	0	3	0	0	0	0	26
Huntington	0	----	----	0	----	2	0	----	0	0	----
Wheeling	0	----	0	0	3	1	0	0	0	10	11
North Carolina:											
Gastonia	0	----	----	0	----	0	0	----	0	0	----
Raleigh	0	----	0	0	0	1	0	1	0	0	1
Wilmington	2	----	0	0	0	0	0	1	0	2	11
Winston-Salem	3	1	0	0	0	4	0	3	0	0	14
South Carolina:											
Charleston	0	26	0	0	4	0	0	2	0	0	31
Florence	0	----	0	0	2	2	0	0	0	0	10
Greenville	1	----	0	1	0	0	0	0	0	0	6
Georgia:											
Atlanta	2	7	3	0	5	9	0	1	0	0	60
Brunswick	0	----	0	0	1	0	0	0	0	0	4
Savannah	1	14	2	0	2	2	0	1	0	2	31
Florida:											
Miami	0	----	1	0	1	1	0	1	0	0	24
Tampa	5	2	2	0	0	2	0	1	0	0	14
Kentucky:											
Covington	1	----	0	0	0	0	0	0	0	0	18
Lexington	2	----	0	1	2	4	0	0	0	0	19
Louisville	2	1	0	2	3	6	0	4	0	1	55
Tennessee:											
Knoxville	3	13	0	0	0	2	0	0	0	0	25
Memphis	2	----	0	1	5	5	0	6	0	5	81
Nashville	1	----	3	0	4	2	0	0	0	10	55
Alabama:											
Birmingham	2	3	0	1	5	5	0	4	0	0	77
Mobile	0	----	1	0	2	1	0	1	0	0	25
Montgomery	0	----	----	0	----	2	0	----	0	0	----
Arkansas:											
Fort Smith	5	----	----	0	----	2	0	----	0	0	----
Little Rock	0	----	0	0	1	1	0	0	0	0	1
Louisiana:											
New Orleans	3	1	1	1	10	7	0	6	4	3	167
Shreveport	0	----	0	0	8	0	0	0	0	1	59
Oklahoma:											
Oklahoma City	0	4	0	2	2	6	0	0	0	0	44
Tulsa	0	----	----	0	----	6	0	0	----	0	----
Texas:											
Dallas	3	1	1	0	1	4	0	3	0	0	51
Fort Worth	4	----	0	0	1	5	0	1	0	0	32
Galveston	0	----	0	0	2	4	0	1	0	0	11
Houston	8	----	0	0	4	2	0	8	0	0	85
San Antonio	0	----	0	0	4	2	0	8	0	0	54
Montana:											
Billings	0	----	0	0	0	1	0	0	0	0	8
Great Falls	0	----	0	0	1	2	0	0	0	1	8
Helena	0	----	0	0	0	0	0	0	0	0	2
Missoula	0	1	0	0	1	1	0	1	0	0	15
Idaho:											
Boise	0	----	0	0	1	1	0	0	0	0	12
Colorado:											
Denver	4	----	0	3	4	15	0	2	0	16	87
Pueblo	0	----	0	0	0	3	0	0	0	2	8

City reports for week ended November 5, 1938—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths all causes
		Cases	Death								
New Mexico:											
Albuquerque	0	------	0	0	0	4	0	1	2	0	8
Utah:											
Salt Lake City	0	------	0	1	3	7	0	2	0	4	35
Washington:											
Spokane	0	------	0	1	3	4	0	0	0	0	39
Tacoma	0	------	0	0	0	1	0	0	0	1	26
Oregon:											
Portland	0	------	0	2	3	15	0	1	0	0	68
Salem	0	------	--------	0	-------	0	0	-------	0	0	--------
California:											
Los Angeles	12	5	0	3	12	40	0	18	1	17	265
Sacramento	0	------	0	3	3	0	0	1	0	1	21
San Francisco	2	------	0	194	10	4	0	5	1	32	166

State and city	Meningitis, meningococcus		Poliomyelitis cases	State and city	Meningitis, meningococcus		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:				Maryland:			
Fall River	0	1	0	Baltimore	1	0	0
New York:				North Carolina:			
Buffalo	2	0	0	Wilmington	0	1	0
New York	3	4	1	Kentucky:			
Pennsylvania:				Louisville	0	1	0
Philadelphia	0	0	2	Tennessee:			
Pittsburgh	1	0	0	Memphis	1	0	0
Scranton	0	0	1	Nashville	2	1	0
Ohio:				Alabama:			
Cleveland	2	0	1	Birmingham	1	0	0
Illinois:				Louisiana:			
Chicago	1	0	0	Shreveport	0	2	0
Michigan:				California:			
Detroit	0	0	2	Sacramento	1	0	0
Wisconsin:							
Kenosha	0	0	1				

Encephalitis, epidemic or lethargic.—Cases: New York, 2; Denver, 1.
Pellagra.—Cases: Boston, 1; Atlanta, 8; Savannah, 4; Birmingham, 1; Montgomery, 2; Los Angeles, 1.
Typhus fever.—Cases: New York, 2; Baltimore, 1; Wilmington, N. C., 2; Charleston, S. C., 2; Atlanta, 2; Savannah, 4; Montgomery, 1.—Deaths: Baltimore, 1.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—2 weeks ended October 22, 1938.—During the 2 weeks ended October 22, 1938, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada, as follows:

Disease	Prince Edward Island	Nova Scotia [1]	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis		1	1		2	1			1	6
Chickenpox		2	3	276	267	57	26	19	95	745
Diphtheria		11	10	95	19	7	5	7		154
Dysentery					10		2			12
Erysipelas		1		7	3	4		2	4	21
Influenza		17			13	2			35	67
Lethargic encephalitis						1				1
Measles		1	1	67	125	24	11	5	3	237
Mumps					34	14		8	11	67
Paratyphoid fever					2					2
Pneumonia		2			30			2	17	51
Poliomyelitis				5	8	12	1	6	1	33
Scarlet fever		20	16	231	191	73	46	44	47	668
Smallpox					1		2			3
Trachoma							1	1	12	14
Tuberculosis	6	15	9	59	95	3		3	26	216
Typhoid fever			10	51	2	6	11	9	4	93
Undulant fever					3		2	1		6
Whooping cough		23		154	206	12	5	5	34	439

[1] For 2 weeks ended Oct. 26, 1938.

CUBA

Habana—Communicable diseases—4 weeks ended October 22, 1938.—During the 4 weeks ended October 22, 1938, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths
Diphtheria	21	
Malaria	27	
Tuberculosis	26	5
Typhoid fever	37	8

Provinces—Notifiable diseases—4 weeks ended October 15, 1938.—During the 4 weeks ended October 15, 1938, cases of certain notifiable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana	Matanzas	Santa Clara	Camaguey	Oriente	Total
Beriberi				2			2
Cancer			3	10			13
Diphtheria	3	19	8	7		3	40
Hookworm disease		1				10	11
Leprosy			1	2			3
Malaria	30	12	21	42	16	46	167
Measles		3	3	3		1	10
Poliomyelitis				1			1
Rabies	1						1
Trachoma				2			2
Tuberculosis	22	41	32	36	32	31	194
Typhoid fever	32	74	13	53	27	57	256
Whooping cough				2			2
Yaws						6	6

JAMAICA

Communicable diseases—4 weeks ended October 29, 1938.—During the 4 weeks ended October 29, 1938, cases of certain communicable diseases were reported in Kingston, Jamaica, and in the island outside of Kingston, as follows:

Disease	Kingston	Other localities	Disease	Kingston	Other localities
Cerebrospinal meningitis		1	Leprosy		2
Chickenpox	5	7	Puerperal fever		3
Diphtheria	5	2	Tuberculosis	44	52
Dysentery	9	1	Typhoid fever	9	28
Erysipelas	1				

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CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

From medical officers of the Public Health Service, American consuls, International Office of Public Health, Pan American Sanitary Bureau, health section of the League of Nations, and other sources. The reports contained in the following table must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

[C indicates cases; D, deaths; P, present]

Place		Mar. 27–Apr. 30, 1938	May 1–28, 1938	May 29–June 25, 1938	June 26–July 30, 1938	Week ended— August 1938 6	13	20	27	September 1938 3	10	17	24	October 1938 1	8	15	22	29
Afghanistan.[1]																		
China:																		
Canton	C			2	16	2	2	3	6	5	5	7	4	5	7			
	D				5			2		3								
Foochow	C									11	8	P						
	D									13	2							
Hankow	C		2	24	213	70	43	25	24	31	20	13	9					
Hong Kong	C		2	22	202	30	39	38	21	19	12	17	20	7	9	16	7	7
	D		1	7	158	17	17	20		6	10	15	11			7	9	
Kwangtung Province	C				11,295	289			2,292	1,408	936	526		142				
	D				2,724	74			622	381	255	116		26				
Macao	C			49	557	29	62	50	41	56	26	31		7	18	39	33	15
	D				399	21	42	37	27	26		15						
Mukden	C					P												
Shanghai	C		20	482	2,053	1,265	1,066	959	586	421	245	209	113	113	95	82	87	24
Swatow	C	1	17	710	518	8	5	7	7	5	13	17	2	3	5			
Tientsin	C				9	6	13	8	1	5								
Tsingtao	C						P											
Chosen (Korea)	C										1	35	11	2				
	D											20	7	1				
Dutch East Indies: **Macassar**	C	[2] 1																
India	C	22,930	33,698	47,910	48,514	14,215	12,316	15,548	13,515	14,948								
	D	10,939	18,724	23,687	22,283	6,561	5,371	7,604	6,231	6,644								
Allahabad	C	8	12	5	18	3	1	1										
Assam	C	938	667	1,194	530	98	38	47	53	422	380	187	104	431	211	256	909	
	D	469	340	575	296	25	18	29	34	247	196	67	45	192	112	147	194	
Bassein	C	4	3	4														
Bengal Presidency	C				1,281	301			427		1,205	1,494	1,929	2,006	1,692	1,671		
	D				587	142			220		867	726	995	1,048	835	939		

[1] Cholera reported present early in June in South Afghanistan, Afghanistan.
[2] El Tor strain.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

CHOLERA—Continued

[C indicates cases; D, deaths; P, present]

Place		Mar. 27–Apr. 30, 1938	May 1–28, 1938	May 29–June 25, 1938	June 26–July 30, 1938	Week ended— August 1938 6	13	20	27	September 1938 3	10	17	24	October 1938 1	8	15	22	29
India—Continued.																		
Bombay Presidency	C	52	22	154	767	287	620	604	612	394	452	378	254	248	----	----	----	----
	D	38	9	81	277	113	192	226	218	174	213	196	101	126	----	----	----	----
Bombay	C	----	[3]1	1	----	3	----	----	----	----	----	----	----	----	----	----	----	----
Calcutta	C	634	436	343	144	24	12	20	14	23	19	25	22	7	39	24	21	23
Cawnpore	C	1	15	88	202	49	21	24	8	15	7	3	1	1	1	1	1	----
	D	1	6	33	49	10	9	11	4	5	3	----	----	----	1	----	----	----
Central Provinces and Berar	C	4,039	5,640	6,878	14,427	6,078	5,342	9,264	7,314	8,884	5,486	5,295	4,620	3,463	1,670	1,455	862	578
Chittagong	C	5	2	1	2	----	3	----	----	----	----	----	----	----	----	----	----	----
Delhi	C	29	74	64	14	----	----	----	1	----	----	----	----	----	----	----	----	----
Howrah	C	344	137	127	156	52	----	51	----	32	15	----	----	----	----	----	----	----
Jodhpur	C	----	3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Madras Presidency	C	1,575	802	1,169	3,613	622	486	397	393	410	528	493	411	----	----	----	----	----
	D	730	352	475	1,501	281	210	192	167	170	188	213	160	----	----	----	----	----
Madras	C	9	1	2	3	1	1	----	----	----	1	----	1	----	----	3	1	----
	D	4	----	----	----	----	----	----	----	----	----	----	----	----	----	1	1	----
Northwest Frontier Province	C	1	284	555	419	70	42	93	243	27	32	2	53	12	6	6	2	----
Orissa Province	C	169	425	332	233	25	12	11	4	6	3	----	3	3	1	----	----	----
Gopalpur	C	----	----	5	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Punjab	C	1,090	2,319	673	542	11	43	29	5	8	6	1	----	----	----	----	----	----
Rangoon	C	----	1	1	----	----	----	----	----	----	----	----	1	----	1	----	----	----
Sind State	C	2	57	242	221	23	17	6	15	1	----	----	----	----	----	----	----	----
Larkana	C	[4]1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
India (French):																		
Chandernagor Territory	C	27	----	11	8	----	----	----	----	----	----	----	1	----	----	----	----	----
Pondichery Province	C	6	----	2	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Yanaon	C	----	----	----	2	----	----	----	----	----	----	----	----	----	----	----	----	----
Indochina (French):																		
Annam Province	C	451	615	698	923	151	161	53	75	34	1	----	----	----	----	----	7	----
Tonkin Province	C	1,043	1,659	1,383	451	----	15	8	----	7	----	----	----	----	61	15	1	----
Haiphong	C	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hanoi	C	175	193	[2]2	34	----	1	3	----	----	----	----	----	----	----	----	----	----

Japan:																			
Fukuoka Prefecture—Wakamatsu	C				2									3					
Hiroshima Prefecture—Fukuyama	C													3					
Okayama Prefecture	C				8														
	D				4														

[1] Imported.
[4] Suspected.

On vessels:
S. S. *Tsushima Maru* at Calcutta from Japan—1 case—Apr. 16, 1938
S. S. *Mandasor* at Calcutta—1 case—Apr. 18, 1938
S. S. *Tak Sang* at Hong Kong from Shanghai and Swatow—1 case—June 5, 1938
S. S. *Kikukawa Maru* at Fukuoka from Shanghai—57 cases—July 28, 1938

On vessels—Continued.
S. S. *Mau Sang* at Hong Kong from Sandakan—1 case—July 18, 1938
S. S. *Kweiyang* at Bangkok from Swatow and Hong Kong—1 case—Aug. 5, 1938
S. S. *Ethiopia* at Madras—1 case—Sept. 5, 1938

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE [1]

[C indicates cases; D, deaths; P, present]

Place		Mar. 27–Apr. 30, 1938	May 1–28, 1938	May 29–June 25, 1938	June 26–July 30, 1938	Week ended— August 1938 6	13	20	27	September 1938 3	10	17	24	October 1938 1	8	15	22	29
Argentina. (See table below.)																		
Belgian Congo	C	4	3	2	3	----	3	----	----	----	1	----	----	----	----	----	----	----
Bolivia (see also table below):																		
Chuquisaca Department	C	3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Santa Cruz Department	C	----	----	10	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tarija Department	C	----	----	96	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Brazil. (See table below.)																		
British East Africa:																		
Kenya	C	4	10	----	9	1	3	----	----	----	----	1	1	----	1	----	----	----
Uganda	C	7	17	19	59	13	8	9	15	19	9	15	10	----	9	----	----	----
	D	7	16	17	61	13	8	9	14	20	9	11	10	----	9	----	----	----
Ceylon:																		
Colombo	C	1	4	1	----	----	1	----	----	----	----	----	----	----	----	----	----	----
	D	----	5	1	----	----	1	----	----	----	----	----	----	----	----	----	----	----
Plague-infected rats		2	4	1	1	----	----	1	1	----	----	----	----	----	----	----	----	----
China. [3]																		
Dutch East Indies:																		
Java and Madura	C	204	130	135	157	32	22	----	----	----	----	----	----	----	----	----	----	----
	D	205	128	135	157	32	22	----	----	----	----	----	----	----	----	----	----	----
Pasoeroean (vicinity of)	C	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ecuador:																		
Guayaquil	C	11	2	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----
	D	8	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Plague-infected rats		----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Egypt: Asyut Province	C	[2] 1	7	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hawaii Territory: Plague-infected rats:																		
Hawaii Island—Hamakua District		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	5
Kukaiau		2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Paauhau Sector [4]		6	2	----	----	----	----	----	1	----	----	----	----	----	2	1	4	3
Pohakea Sector		1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
India	C	2,294	218	68	488	261	144	261	241	276	----	----	----	----	----	----	----	----
	D	1,164	224	32	275	103	88	113	105	96	----	----	----	----	----	----	----	----
Allahabad	C	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bassein	C	1	4	2	4	----	1	1	----	----	2	----	----	----	----	----	----	----
Bombay Presidency	C	58	6	11	27	12	7	9	21	27	11	31	14	21	----	----	----	----
	D	30	2	9	14	7	5	4	11	13	4	15	8	20	----	----	----	----

Central Provinces and Berar	C	821	42	1	------	8	11	55	52	109	119	68	116	166	46	144	73	------
Cochin	C	------	------	------	------	------	------	------	1	------	------	------	------	------	------	------	------	1
	D	------	------	------	------	------	------	------	1	------	------	------	------	------	------	------	------	------
Plague-infected rats		------	------	------	------	------	2	------	------	2	1	3	4	3	2	4	2	2
Madras Presidency	C	70	24	51	231	66	52	62	47	30	61	49	55	------	------	------	------	------
	D	26	15	24	84	27	24	28	18	13	21	22	32	------	------	------	------	------
Rangoon	C	1	------	1	3	------	------	1	------	------	------	2	------	------	------	------	------	------
	D	1	------	1	3	------	------	1	------	------	------	2	------	------	------	------	------	------
Madagascar. (See table below.)																		
Peru. (See table below.)																		
Senegal: M'Bour subdivision	C	------	------	1	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Tunisia: Tunis	C	------	------	------	------	------	------	------	------	------	------	------	------	------	------	1	1	------
Plague-infected rats		------	------	------	2	------	------	------	------	------	------	------	------	------	------	------	------	------
Union of South Africa (see also table below)	C	[3]4	21	8	4	------	------	------	------	------	1	------	2	------	------	------	------	------
Cape Province—Port Elizabeth	C	8	------	2	3	------	------	------	2	------	------	------	1	1	------	------	------	------
	D	11	------	------	1	------	------	------	------	------	------	------	------	------	------	------	------	------
United States.[4]																		
On vessel:																		
S. S. *Ville de Tamatave* at Beirut	C	1	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

Place		April 1938	May 1938	June 1938	July 1938	August 1938	September 1938
Argentina: Salta Province	C	------	------	4	------	1	1
Bolivia (see also table above)	C	------	------	------	6	4	------
Brazil:[7]							
Ceara State	C	6	1	------	------	------	------
	D	3	------	------	------	------	------
Pernambuco State.[7]							
Madagascar (central region)	C	29	16	5	22	33	------
	D	26	13	5	20	31	------

Place		April 1938	May 1938	June 1938	July 1938	August 1938	September 1938
Peru	C	3	1	------	1	4	7
Libertad Department	C	2	------	------	------	1	------
Lima Department	C	1	1	------	1	3	6
Union of South Africa:							
Cape Province	C	12	19	------	------	------	------
Orange Free State	C	2	7	5	------	------	------

[1] Including plague in the United States and its possessions.

[2] According to information dated Aug. 12, 1938, 23 deaths from plague occurred in Kirin Province, China, up to Aug. 10, 1938, and 16 deaths from plague occurred in South Hin-An Province from July 28 to Aug. 8. Information dated Aug. 25, 1938, states that 17 cases of plague had occurred in South Hsingan Province and that 10 cases of plague with 10 deaths were reported in Northern Kirin Province between July 29 and Aug. 10.

[3] Pneumonic.

[4] For the week ended Nov. 5, 1938, 5 plague-infected rats were reported in Paauhau Sector, Hamakua District, Island of Hawaii, Hawaii Territory.

[5] For 2 weeks.

[6] Last reported human case, Aug. 30, 1937, Fresno County, Calif. Intensive plague work is being conducted in the western States and detailed reports of plague-infection found in animals and insect hosts are published currently in the PUBLIC HEALTH REPORTS. The following summarizes recent reports for 1938: *Arizona*.—Insects, Sept. 27; *California*.—Ground squirrels, April, May, June, July, August, Oct. 10, 12; insects, April, May, June, July, August, Oct. 12; *Idaho*.—Ground squirrels, May, June; insects, May, June, July; *Montana*.—Ground squirrels, June; insects, May, June; *Nevada*.—Insects, April; *New Mexico*.—Prairie dogs, August, September; insects, August, September; *Oregon*.—Ground squirrels, April, May; insects, April, May; *Utah*.—Ground squirrels, June; insects, May, July; *Washington*.—Ground squirrels, April; insects, April; *Wyoming*.—Ground squirrels, June, July; insects, June, July, August.

[7] Information dated Apr. 19, 1938, states that since Mar. 25, 1938, 4 deaths from bubonic plague have been reported in Novo Eru District, Pernambuco State, Brazil.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX

[C indicates cases; D, deaths; P, present]

Place		Mar. 27–Apr. 30, 1938	May 1–28, 1938	May 29–June 25, 1938	June 26–July 30, 1938	Week ended— August 1938 6	13	20	27	September 1938 3	10	17	24	October 1938 1	8	15	22	29
Algeria:																		
Algiers Department	C	1	1	1														
Constantine Department	C		1	1				1										
Philippeville	C							1										
Southern Territories	C	1																
Angola. (See table below.)																		
Belgian Congo. (See table below.)																		
Bolivia. (See table below.)																		
Brazil: Porto Alegre	D		2															
British East Africa: Tanganyika	C	205		84	158	54		1	39	29	1				9			
Canada:																		
Alberta	C	9		12	1													
British Columbia	C		1															
Manitoba	C			16	10													
Ontario	C					9											1	
Saskatchewan	C				11						[1]1						[1]2	
China:																		
Canton	C	46	1															
Dairen	C	2	1	2														
Hankow	C	16	15	24	6													
Hong Kong	C	514	90	25	5													
	D	590	93	19	3													
Macao	C	8	1															
Shanghai	C	12	13	8	7	7				2		2		6	12	10	8	17
Swatow	C	[2]1	2															
Tientsin	C			1														
Chosen (Korea). (See table below.)																		
Colombia (see also table below):																		
Barranquilla	D	1																
Cartagena	D			1	1													
Dahomey	C		119															
Dutch East Indies: Batavia	C		4									[2]1						
Ecuador: Guayaquil	C	1																

Egypt:																			
Alexandria	C		1																
Port Said	C	9																	
Eritrea	C	1	1																
Great Britain: England and Wales—																			
Kent County—Gravesend	C		2	1															
Lancaster County	C				2	3													
Greece. (See table below.)																			
Guatemala. (See table below.)																			
Honduras: Tela	C		2																
India	C	16,692	12,001	5,716	4,562	671	545	478	241	329									
	D	3,575	3,265	1,621	1,242	160	148	97	105	89									
Allahabad	C	2																	
Assam	C	224	193	163	87	26	6	7	10	3		5	2	4	4				
Bassein	C	1	3		1														
Bengal Presidency	C				389	104			62		37	35	51	22	12	25			
	D				132	36			23		13	16	22	3	7	7			
Bombay Presidency	C	3,569	1,720	626	684	106	90	100	105	44	45	105	87	98					
	D	620	337	170	119	18	20	15	24	7	2	15	13	10					
Bombay	C	508	159	57	37	7	1	4	3	1	3	2	3		3	1	1		
	D	300	108	38	28	6		3	2	1		1	1						
Calcutta	C	768	336	165	86	9	6	8	8	12	6	5	5		1	3	5	1	
	D	574	273	142	54	8	5	5	5	8	5	4	1		1		5	1	
Cawnpore	C	31	10	2															
Central Provinces and Berar	C	507	340	260	144	11	5	11	1	6		8	1	1	7	1	5		
Chittagong	C	1	1																
Delhi	C	26	32	8	1					1									
Howrah	C	61	23	50	24	17				11	7								
Jodhpur	C		1	1									1						
Karachi	C	21	5	4		1													
Madras Presidency	C	699	390	228	539	179	122	101	109	98	95	57	56						
	D	208	75	44	113	26	20	21	31	16	23	13	12						
Madras	C	241	138	126	185	46	34	30	22	34	23	15	28	14	16	17	26	8	
Negapatam	C	11	3																
Northwest Frontier Province	C	86	235	82	95	15	9	17	34	4	10	1	9	4	8	5	12	8	
Orissa Province	C	936	704	487	442	89	65	54	50	42	24	27	26	3	14	6	8	15	
Punjab	C	553	213	44	41	1	6		9	6	4	1	2	1	3	2	2	2	
Rangoon	C	23	12	21	2	1		2	3		1	1	2	1			2		
Sind State	C	844	491	300	167	14	54	24	20	8	24	13	18			13	3	13	
Vizagapatam	C	2																	
India (French): Chandernagor Territory	C	2	4	2				3											
Indochina (French) (see also table below):																			
Tonkin Province	C	905	332	156	88		10	20	15	7	22	4	13	5	9	8	12		
Haiphong	C	30	3	1															
Hanoi	C	46	6	4															
Saigon-Cholon	C	2	2		5		1	1	1	1	3	2	1	5	4				
Tourane	C		1											3					
Iran	C	2					1						3						
Iraq	C	11																	
Baghdad	C		1																

[1] For 2 weeks.
[2] Imported.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		Mar. 27–Apr. 30, 1938	May 1–28, 1938	May 29–June 25, 1938	June 26–July 30, 1938	Week ended— August 1938 6	13	20	27	September 1938 3	10	17	24	October 1938 1	8	15	22	29
Ivory Coast. (See table below.)																		
Japan:																		
Kobe	C			1														
Nara Prefecture	C			1														
Saga Prefecture	C	1																
Mexico (see also table below):																		
Durango	D	1																
Mexico, D. F	C	6	11	8	7				1									
Monterrey	C	2	2	5				3										
Saltillo	D			1														
San Luis Potosi	D		2	1														
Morocco. (See table below.)																		
Nigeria	C	253	405	130	102	115		45	120									
Lagos	C	4	1	2	2				1	2	8							
Niger Territory. (See table below.)																		
Northern Rhodesia	C				22			6		6								
Nyasaland	C							1		2	2	1						
Portugal (see also table below):																		
Lisbon	C	1	5	6	7		4		1		3	2		2	2	1		
Oporto	C									1				2	5			
Senegal. (See table below.)																		
Siam	C	3	1	1									33					
Sierra Leone	C	23	6	1	1													
Southern Rhodesia	C	28	39	70	983	10	225	133	35	28	28	7	33					
Straits Settlements: Singapore	C	1																
Sudan (Anglo-Egyptian)	C	59	19	8	1	1		3			1		1	20	2	1	4	3
Tunisia: Tunis	C			3														
Union of South Africa. (See table below.)																		
Uruguay. (See table below.)																		
Venezuela. (See table below.)																		

On vessels:

S. S. *Kiturin Maru* at Moji from Dairen — 1 case — Mar. 31, 1928
S. S. *Sirdhana* at Singapore from Kobe, Amoy, and Hong Kong — 1 case — Apr. 1, 1938
S. S. *Prosper* at Singapore from Hong Kong and Swatow — 2 cases — Apr. 3, 1938
S. S. *Straithaird* at Fremantle — 2 cases — Apr. 7, 1938
S. S. *Shirala* at Singapore from Japan — 1 case — Apr. 14, 1938
S. S. *Hosang* at Singapore from Hong Kong — 3 cases — Apr. 15, 1938
S. S. *Cremer* at Singapore from Amoy, Swatow, and Hong Kong — 1 case — Apr. 19, 1938
S. S. *Jean Laborde* at Singapore from Kobe, Shanghai, Hong Kong, and Saigon — 1 case — Apr. 21, 1938

On vessels—Continued.

S. S. *Sandviken* at Singapore from Hong Kong — 1 case — Apr. 29, 1938
S. S. *Hinsang* at Sandakan from Hong Kong — 1 case — May 18, 1938
S. S. *Forth Bank* at Niigata from Vancouver — 1 case — May 28, 1938
S. S. *Ellenga* at Rangoon from Calcutta — 1 case — July 19, 1938
S. S. *Planter* at Aden — 1 case — Aug. 2, 1938
S. S. *Pronto* at Tangku-Taku from Hong Kong — 1 case — Aug. 8, 1938
S. S. *Defender* at Aden — 1 case — Aug. 19, 1938
S. S. *Katori Maru* at Kobe from London, Singapore, Hong Kong, and Shanghai — 3 cases — Aug. 20, 1938
S. S. *Conte Biancamano* at Suez from Shanghai, Colombo, Bombay, and Massowah — 1 case — Sept. 10, 1938

Place		April 1938	May 1938	June 1938	July 1938	August 1938	September 1938
Angola	C	86	13	-------	35	-------	-------
Belgian Congo	C	252	251	-------	262	163	-------
Bolivia:							
Cochabamba Department	C	1	5	4	2	2	-------
La Paz Department	C	12	6	5	5	27	-------
Oruro Department	C	1	1	-------	-------	-------	-------
Potosi Department	C	4	1	4	2	-------	-------
Santa Cruz Department	C	1	1	1	5	8	-------
Tarija Department	C	-------	1	-------	-------	-------	-------
Chosen (Korea)	C	5	8	-------	4	-------	-------
Colombia	C	-------	-------	[1] 226	124	68	-------
Greece: Salonika	C	-------	2	-------	5	-------	-------
Guatemala	C	1	3	4	-------	1	-------
Indochina (French) (see also table above)	C	1,237	511	-------	137	206	82
	D	161	90	-------	32	48	21
Ivory Coast	C	23	-------	-------	-------	10	-------
Mexico (see also table above):							
Aguascalientes State—Aguascalientes	C	12	1	-------	-------	-------	-------
Campeche State	C	2	-------	-------	-------	-------	-------
Chihuahua State—Ciudad Juarez	C	-------	4	-------	-------	-------	-------
Coahuila State—Piedras Negras	C	-------	1	-------	-------	-------	-------

Place		April 1938	May 1938	June 1938	July 1938	August 1938	September 1938
Mexico—Continued.							
Guerrero State	C	1	-------	-------	-------	-------	-------
Hidalgo State	C	7	-------	-------	-------	-------	-------
Mexico State	C	1	-------	-------	-------	-------	-------
Mexico, D. F.	C	5	19	-------	-------	-------	-------
Michoacan State	C	4	5	-------	-------	-------	-------
Nuevo Leon State—Monterrey	C	2	4	-------	-------	-------	-------
Queretaro State	C	3	-------	-------	-------	-------	-------
San Luis Potosi State	C	1	1	-------	-------	-------	-------
Morocco	C	4	-------	3	4	1	-------
Niger Territory	C	51	-------	-------	-------	-------	-------
Portugal (see also table above)	C	-------	46	41	-------	40	-------
	D	-------	3	2	-------	4	-------
Senegal	C	116	-------	-------	-------	-------	-------
Union of South Africa:							
Cape Province	C	-------	-------	-------	-------	1	-------
Natal	C	-------	-------	-------	-------	25	-------
Orange Free State	C	-------	-------	-------	-------	1	-------
Transvaal	C	-------	-------	-------	-------	33	-------
Uruguay—Montevideo	C	-------	-------	2	-------	-------	-------
Venezuela	D	-------	8	5	2	3	-------

[1] For 3 months.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER

[C indicates cases; D, deaths; P, present]

Place		Mar. 27–Apr. 30, 1938	May 1–28, 1938	May 29–June 25, 1938	Week ended— July 1938					August 1938				September 1938				October 1938		
					2	9	16	23	30	6	13	20	27	3	10	17	24	1	8	15
Algeria:																				
Algiers Department	C	43	34	53	1	5	3	4	.....	2	3	.....	.....	1	.....	1	.....	1	5	.....
Algiers	C	3	7	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Constantine Department	C	163	179	172	16	1	8	6	11	4	1	11	4	9	2	5	9	3	2	.....
Bone	C	.....	1	26	.....	.....	1	.....	2	1	.....	1	2	.....	.....	.....	.....	.....	.....	.....
Constantine	C	25	94	5	.....	1	1	.....	3	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....
Philippeville	C	.....	1	.....	.....	.....	.....	.....	.....	1	.....	4	2	2	1	1	7	.....	.....	.....
Oran Department	C	34	17	18	3	3	.....	3	.....	.....	1	.....	11	.....	1	.....	.....	.....	1	.....
Southern Territory	C	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Australia: Adelaide	C	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Basutoland	C	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....
Bolivia. (See table below.)																				
British East Africa: Kenya	C	5	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	1	1	.....	.....	.....	.....	.....
Bulgaria	C	2	.....	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chile	C	51	26	23	4	5	6	18	10	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Concepcion	C	16	2	1	.....	1	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Coquimbo Province	C	.....	.....	.....	.....	3	1	.....	4	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Malleco Province	C	2	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nuble Province	C	2	10	10	1	.....	3	2	4	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Santiago Province	C	17	2	1	.....	.....	1	3	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tarapaca Province	C	.....	.....	.....	.....	.....	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Valdivia Province	C	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Valparaiso	C	2	2	6	2	.....	1	.....	.....	.....	.....	.....	1	.....	.....	1	1	.....	.....	3
China (see also table below):																				
Dairen	C	2	1	6	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hankow	C	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hong Kong	C	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shanghai	C	236	254	214	.....	35	27	.....	.....	.....	.....	.....	.....	5	.....	.....	3	2	3	.....
Tientsin	C	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chosen (Korea). (See table below.)																				
Colombia: **Barranquilla**	D	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Czechoslovakia. (See table below.)																				
Dutch East Indies: Sumatra. (See table below.)																				

Egypt:																				
Alexandria	C	9	14	5	1	1	----	1	----	----	1	----	----	----	----	1	----	----	----	----
Aswan Province	C	16	24	4	----	----	----	----	----	----	----	----	2	1	1	----	----	----	----	----
Asyut Province	C	1	12	1	2	----	----	----	----	----	----	----	6	7	3	----	----	----	----	----
Beheira Province	C	78	91	45	2	----	----	8	----	----	----	----	1	----	----	1	----	----	----	----
Cairo	C	20	14	24	2	1	2	1	2	----	1	----	6	3	3	----	2	----	8	----
Dakahliya Province	C	14	10	10	16	----	----	13	----	----	----	----	1	3	1	----	1	----	----	----
Gharbiya Province	C	43	26	23	4	----	----	----	----	----	----	----	1	----	----	----	----	----	----	----
Girga Province	C	----	4	----	----	----	----	5	----	----	----	----	1	----	----	----	----	----	----	----
Giza Province	C	----	----	----	15	----	----	7	----	----	----	----	1	----	----	----	----	----	----	----
Kalyubiya Province	C	----	----	----	7	----	----	----	----	----	----	----	1	----	----	----	----	----	----	----
Minufiya Province	C	57	49	33	14	----	----	13	----	----	----	----	----	----	----	----	----	----	----	----
Minya Province	C	4	4	----	----	----	----	----	----	----	----	----	1	----	----	----	----	----	----	----
Port Said	C	----	2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Qena Province	C	109	32	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sharkiya Province	C	1	9	8	5	----	----	2	----	----	----	----	----	----	----	----	1	----	----	----
Provinces	C	626	687	414	65	42	42	70	26	21	24	32	18	14	9	2	3	9	1	4
Greece. (See table below.)																				
Guatemala. (See table below.)																				
Hawaii Territory: **Honolulu**	C	----	3	2	1	2	----	----	----	----	----	----	3	1	1	----	2	2	1	2
Hungary	C	1	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Iraq	C	1	----	----	----	----	----	----	----	----	----	----	1	----	----	----	3	1	----	----
Latvia. (See table below.)																				
Libya: Garian	C	----	----	----	----	----	----	----	----	----	1	----	----	----	----	----	----	----	----	----
Lithuania. (See table below.)																				
Mexico (see also table below):																				
Mexico, D. F	C	40	5	7	----	----	4	4	7	----	----	1	----	4	----	2	----	----	2	----
Monterrey	C	----	----	----	----	----	----	----	----	----	1	----	1	----	----	----	----	1	----	----
Torreon	D	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	----
Morocco (see also table below)	C	1,011	684	576	66	56	39	36	29	22	16	9	8	4	3	4	----	----	4	----
Casablanca	C	91	113	34	7	5	1	6	4	1	3	1	----	1	----	----	----	----	----	----
Palestine:																				
Haifa	C	----	1	3	----	----	----	----	----	----	----	----	----	1	----	2	----	1	----	1
Jaffa	C	2	4	2	----	----	1	1	----	3	1	----	----	----	3	----	6	3	----	1
Panama Canal Zone. (See table below.)																				
Poland	C	652	424	267	64	67	33	31	20	18	10	13	17	12	5	12	8	10	17	14
	D	30	15	12	5	4	----	----	----	----	----	----	----	----	----	----	1	----	1	----
Portugal. (See table below.)																				
Rumania. (See table below.)																				
Sierra Leone: Freetown	C	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Straits Settlements: **Singapore**	C	1	----	1	1	----	----	----	----	1	----	----	----	----	----	----	----	----	----	----
Trans-Jordan	C	4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tunisia:																				
Tunis	C	12	13	15	6	1	2	2	----	2	1	----	----	----	----	1	8	4	8	----
Provinces	C	217	255	349	55	54	52	47	37	12	26	26	22	18	20	18	17	5	19	----
Turkey. (See table below.)																				
Union of South Africa. (See table below.)																				
Yugoslavia	C	108	68	60	----	5	13	2	14	5	2	3	1	1	----	1	5	8	1	----
On vessel:																				
S. S. *Empress of Japan* at Yokohama	C	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER—Continued

[C indicates cases; D, deaths; P, present]

Place		April 1938	May 1938	June 1938	July 1938	August 1938	September 1938
Bolivia:							
Cochabamba Department	C		4		1	1	
La Paz Department	C	12	17	8	5		
La Paz	C				2	1	
Oruro Department	C	3	8	6	2	1	
Potosi Department	C	5		4	3	7	
China: Manchuria—Harbin	C	4	9		1		
Chosen (Korea)	C	87	55		22	1	
Czechoslovakia	C	12	1				
Dutch East Indies: Sumatra	C						
Greece	C				5		
Guatemala	C	40	2	11	108	20	6
Latvia	C				1		
Lithuania	C	20	25	3	3		
Mexico (see also table above):							
Aguascalientes State	C	2	3				
Coahuila State	C						
Guanajuato State	C	4	3				
Hidalgo State	C	2					
Lower California	D	1					
Mexico—Continued.							
Mexico State	C		7				
Mexico, D. F	C	32	5				
Oaxaca State	C	1					
Queretaro State	C	2					
San Luis Potosi State	C	2	2				
Zacatecas State	C	4					
Morocco (see also table above)	C	1,474	1,264				
Panama Canal Zone	C	1					
Portugal	C					3	2
Rumania	C	257	222	35	10	5	
Turkey	C	73	38		12		
Istanbul	C	3	3	6	4	2	
Union of South Africa:							
Cape Province	C	36	4	37	98	62	
Port Elizabeth	C	1					
Natal	C	1			1	1	
Orange Free State	C	6	2	2	10		
Transvaal	C	7	3			1	

YELLOW FEVER

[C indicates cases; D, deaths; P, present]

Place		Mar. 27–Apr. 30, 1938	May 1–28, 1938	May 29–June 25, 1938	Week ended— July 1938					August 1938				September 1938				October 1938		
					2	9	16	23	30	6	13	20	27	3	10	17	24	1	8	15
Brazil: [1]																				
Amazonas State	D		1						1											
Minas Geraes State	D	5	8	3																
Rio de Janeiro State	D	8	3																	
Santa Catherina State	D	16																		
Sao Paulo State	D	2																		
Colombia:																				
Cundinamarca Department	D		2	3	1				1	1			1							
Santander Department	D	2																		
Dahomey: Allada	C					1														
French Equatorial Africa: Gabon—Koula Moutou	C				[2] 1															
Gold Coast	C	[2] 1	[2] 2	3		1			2					1			2		1	3
	D	[2] 1							1					1					1	
Keta	C	[2] 1	1																	
Ivory Coast:																				
Bobo-Dioulasso	D												1							
Bognoa	C					[2] 1														
Dedougou [3]	C																		1	
Korhogo	C																	[4] 1		
Tenkodogo	C																			1
Nigeria	C		2							[2] 1			[2] 1	1				[2] 2	[2] 1	
	D									[2] 1								1		
Senegal: Diourbel	D	1																		
Sierra Leone: Kailahun	C		[2] 1																	
Sudan (French):																				
Kouy	C																[2] 1			
Segou Circle—Kokry	C			1																
Tougan	C																			3

[1] See also reports of yellow fever in Brazil in preceding issues of the PUBLIC HEALTH REPORTS.
[2] Suspected.
[3] During the week ended Nov. 5, 1938, 1 suspected case of yellow fever not confirmed clinically was reported in Dedougou, Ivory Coast.
[4] Stated to be from Tiassale, Ivory Coast.
[5] Includes 1 suspected case not confirmed by anatomical pathology.

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